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SUBJECT INDEX TO THIS ISSUE

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THE DIAGNOSIS OF BRONCHIAL ASTHMA *

CHARLES H. EYERMANN, M.D.

ST. LOUIS

The term asthma is one which has been rather loosely applied to all conditions in which dyspnea is a pronounced symptom, but we can now obtain sufficient evidence to restrict its use to the affection known as bronchial or spasmodic asthma; in other words, to that condition characterized by dyspnea, the result of allergenic reaction.

The accumulated knowledge of the last ten years is greatly in favor of hypersensitiveness as the basic factor. It is not germane to the present purpose to discuss the pioneer work which placed bronchial asthma on an allergenic basis. At least from a clinical standpoint, the evidence is too overwhelming to deny the existence of this association, so it is desired to emphasize those factors that should be considered before applying the term asthma to a given condition.

THE HISTORY OF SIMILAR SYMPTOMS IN THE ANTECEDENTS

Longcope [1] believes there is an apparent definite tendency toward inheritance. He states that the symptom of allergy appears early in many and may be observed on first contact with a given protein. Cooke and Vander Veer [2] found a positive family history for hypersensitiveness in 48 per cent. of their cases of clinical hypersensitiveness, while only 14.5 per cent. of normal persons gave a positive antecedent history. Adkinson,[3] in Walker's cases, found 48 per cent. giving a positive family history. Again, Rackemann [4] found 58 per cent. of sensitive cases presenting a positive family history, while only 10.5 per cent. of nonsensitive cases gave such a history. Among the pediatricians, Talbot [5] found a positive family history in all of nineteen cases of asthma in children that he studied in great detail; Schloss,[6] 59 per cent. in eighty children; Herman,[7] 65 per cent. in sixty-one children with a positive family history. By a positive history is meant the occurrence of asthma, hay-fever, eczema and urticaria.

Thus it becomes pertinent that the family history of approximately 50 per cent. of cases supplies one link in the diagnosis. One should be warned that scrupulous attention must be observed in obtaining this history. All types of dyspnea have been called asthma in the past, so that one applies to this antecedent history the same safeguard that one applies in obtaining the history of the present illness. The question of hay-fever and urticaria in the antecedent is rather easily determined, but the question of asthma and eczema is one that is shrouded in all sorts of phantasies in the lay mind.

AGE OF ONSET

It has been shown that the age of onset is very important and seems to bear a definite relationship to sensitivity.[8] By means of sensitization tests, it has been found that the earlier in life symptoms of hypersensitiveness manifest themselves, the more likely they are to be due to sensitization. Approximately 80 per cent. of patients whose symptoms commence before the age of 2 years have given positive cutaneous reactions; then, as the age of onset increases, the percentage of sensitization decreases, and necessarily the percentage of nonsensitive cases increases. More definitely stated, the nonsensitive cases number more than 50 per cent. when the age of onset is beyond 20 years. When the age of onset is past 40 years, the great probabilities are that they are nonsensitive. Walker,[9] finds no positive cases after fifty years; Cooke and Vander Veer,[10] only one case, which covers the two largest reported groups of asthmatics. In our own smaller group, there is one instance in which the suspicion of sensitivity in a man past 60 years is very strong, but the proof is difficult, owing to the associated pathology.

Cooke and Vander Veer [2] believe, further, that the age of onset is influenced by heredity. They have presented evidence that when the inheritance is derived from both the maternal and the paternal sides, the period of greatest liability is the first five years; that when it is derived from either parent alone, the age of onset is between 10 and 15 years; that when the age of onset is after 20 years, no history of parental hypersensitiveness is obtained. In the latter instance, if one subscribes to the theory of heredity it can be presumed that the inheritance is more distant.

It is well to point out here that asthma in infants and young children is manifested most frequently by so-called colds and bronchitis. These symptoms take on the appearance of chronicity very easily, owing to the fact that, if due to a food, it would be one eaten rather frequently, or if due to inhalation, there would be constant exposure to the keratoproteins usually found

* From the Medical Clinic, Washington University Dispensary.

1. Longcope, W. T.: The Susceptibility of Man to Foreign Protein, Am. J. M. Sc. **152**: 625 (Nov.) 1916; Protein Hypersensitiveness and Its Importance in the Etiology of Disease, J. A. M. A. **77**: 1535 (Nov. 12) 1921.
2. Cooke, R. A., and Vander Veer, Albert, Jr.: Human Sensitization, J. Immunol. **1**: 201 (June) 1916.
3. Adkinson, J.: Genetics, **5**: 363, 1920; Oxford Medicine **2**: 233.
4. Rackemann, F. M.: A Clinical Study of 150 Cases of Bronchial Asthma, Arch. Int. Med. **22**: 517 (Oct.) 1918.
5. Talbot, F. B.: Asthma in Children, II, Its Relation to Anaphylaxis, Boston M. & S. J. **175**: 191 (Aug. 10) 1916.
6. Schloss, O. M.: Allergy in Infants and Children, Am. J. Dis. Child. **19**: 433 (June) 1920.
7. Herman, Harold: A Critical Study of Sixty-One Cases of Asthma and Eczema in Infancy and Childhood Controlled by Cutaneous Protein Sensitization Tests, Am. J. Dis. Child. **24**: 221, 1922.
8. Walker, I. C.: A Clinical Study of Four Hundred Cases of Bronchial Asthma, Boston M. & S. J. **179**: 288 (Aug. 29) 1918.
9. Walker, I. C., in Oxford Medicine **2**: 229.
10. Cooke, R. A., and Vander Veer, Albert, Jr., in Tice's Medicine **5**: 499.

to be etiologic factors. Further, since infants spend most of their lives sleeping, by themselves, especially after eating, they could have true asthmatic attacks without the immediate family being cognizant of an ailment, and thus develop bronchitis as the presenting symptom.

Thus, we have another factor which materially assists us in arriving at the diagnosis of bronchial asthma. When one learns that there is an early age of onset of symptoms characteristic of paroxysmal dyspnea due to protein sensitization, if one can fortify this knowledge with a positive antecedent history, one has at least strong presumptive evidence that one is dealing with bronchial asthma.

SYMPTOMS

All attacks of paroxysmal dyspnea can be divided into two classes. In one, in which positive cutaneous protein reactions have been obtained, the first symptom noted by the patient is a sense of constriction or tightening in the chest, followed by increasing respiratory difficulty, more pronounced with expiration, and eventuating in a cough, which is dry at first, but becomes in a short time characteristically productive. This sequence of events will not vary in the sensitive cases, no matter how long standing the condition. This type of attack occurs at any time, day or night, not with any regularity, and unassociated with exertion. Often this type of paroxysmal dyspnea is preceded by so-called head colds, which consist of sneezing and the production of a colorless coryza. I believe that when the coryza remains colorless, it is but the nasal manifestation of hypersensitiveness, and that the subsequent dyspnea is the bronchial manifestations of the same protein irritant. Clinically, it apparently makes no difference how the protein is introduced. This sequence of symptoms, from sneezing and coryza to spasmodic dyspnea, or spasmodic dyspnea alone, has been observed to occur in sensitive patients, whether the exposure to the offending protein is by inhalation (keratoprotein and pollen) or ingestion (food proteins).

Records of the following cases will help to illustrate the foregoing.

REPORT OF CASES

Case 1.—A boy, aged 5 years, had complained of asthma since the age of 1 year, preceded by eczema existing since the age of 6 weeks. He had asthmatic attacks at least once each month, and frequent head colds, with much sneezing and coryza. He had had thorough nose and throat attention without relief. Of significance to us in the family history is the fact that the father has "rose fever," consisting of paroxysmal sneezing and coryza, commencing about the first of June and lasting to mid-July. This patient gave positive cutaneous reactions to the split proteins of wheat, potato, egg, oat, horse dander, wool, cat and dog hair, goose feathers and ragweed. Appropriate treatment by nonexposure to the offending proteins has made this child asthma free and also free from head colds. To be noted in this case, particularly, are the early onset of asthma preceded by eczema, which is a very frequent preceding factor; the positive antecedent history; the removal of laryngologic foci without benefit, and the improvement by the mere withdrawal of the etiologic factors.

Case 2.—A woman, single, white, aged 37, seen, Feb. 14, 1921, had complained of asthma, distinctly nonseasonal, since the age of 6 weeks. The family history for allergenic phenomena was unreliable. Physical examination, including laryngologic examination, was essentially negative. Positive cutaneous reactions were obtained to casein, barley, oat, rice and pea. Appropriate abstinence in her diet has made this patient practically asthma free.

Case 3.—A man, white, aged 54, seen, Dec. 5, 1921, complained of asthmatic attacks for the last thirty-five years. The essential features in this patient were positive cutaneous reactions to horse dander, chicken feathers and dog hair. Through the elimination of these factors, he has been asthma free since Dec. 19, 192..

To be noted in these adult cases is the early age of onset and the improvement with nonexposure to the offending proteins despite the long continuance of symptoms. The last patient received desensitization injections of horse dander because his employment required the handling of horses. During the year of observation, he had one week of discomfort, which is to be compared to his previous more of less constant dyspnea. In all three cases, it is noteworthy that the physical examination was essentially negative. In the adult cases, the existence of emphysema can be assumed, although at the present time it is producing no clinical manifestations.

In the other type of paroxysmal dyspnea, in which no positive cutaneous protein reactions are obtained, the attack is initiated by cough, of progressive frequency and severity, that by its very nature produces dyspnea, a dyspnea rather inspiratory than expiratory, and finally relieved by productive expectoration. The sputum is more frequently purulent, particularly if there are head colds in which the nasal secretion is yellow and thick. If these attacks have existed for some time, there is noticeable dyspnea on exertion, or exertion may provoke the attack. This type is found in children and young adults associated with nasopharyngeal and respiratory infections. But when it develops during or past middle age, the symptoms usually come on with cold weather, so-called "winter asthma," the sputum in the latter type being more frequently watery and frothy, rather than purulent. The description of emphysema in Osler's Practice of Medicine exactly fits the latter type. There is, however, a "winter asthma" occurring in children and young adults in whom positive reactions are obtained to the keratoproteins, due to their more intimate exposure to the offending protein during the winter months (keratoproteins).

It can be presumed that there is some bronchial constriction in these nonsensitive cases, since they are partially relieved by the inhalation of antispasmodic fumes. These drugs release the muscular constriction, thus setting free the sputum, which is expectorated, with consequent relief. The muscular constriction probably results from local irritation due to protracted coughing and to the tenacious secretion. It has been our observation that the relief obtained from antispasmodic remedies in the nonsensitive cases is not as marked as that obtained when the bronchial constriction is due to protein irritation. In the nonsensitive case, there is usually a gradual diminution of symptoms, and not the startling rapid relief seen in the true bronchial asthmatic.

It has been mentioned that irregularity of attacks characterizes the sensitive cases. There are exceptions. Patients sensitive to pollen usually have their attacks of dyspnea at night. It is thought that this is so because hay-fever sufferers are forced to become mouth breathers while asleep, and thus the same turgescence and edema are produced as in the nasal apparatus. Just recently, we have had some support in this belief in a patient who had nonseasonal hay-fever, or allergenic coryza, from flour dust, giving positive cutaneous tests to the split proteins of wheat. In order that he might continue his work, he plugged the nostrils with cotton, which resulted in a noticeable amelioration of the nasal

symptoms; but he developed an irritative cough and paroxysmal dyspnea, for which he sought relief. Also, patients sensitive to the keratoprotein necessarily have the greater number of their attacks at night because it is at this time that they are in contact with these proteins.

One cannot be too dogmatic in outlining the symptoms of paroxysmal dyspnea. Frequently, repeated attacks in the true asthmatic may produce sufficient bronchitis, so that the symptoms simulate the nonsensitive dyspneic. Constant exposure to one offending protein may produce continuous dyspnea or the clinical picture of emphysema. The history and sensitization tests are an invaluable aid and will make the diagnosis. But from the standpoint of symptomatology, one feels safe in saying that the great majority of sensitive cases are characterized by spontaneous attacks, usually unassociated with exertion, and initiated by an oppressive feeling in the chest or chest tightening and dyspnea, followed by cough; while in the nonsensitive cases the attacks are initiated by cough, followed by dyspnea and chest oppression, and more frequently associated with exertion. In general, one can say that dyspnea on exertion or nocturnal dyspnea does not indicate bronchial asthma. Our observation has been that the conditions most frequently appearing in the asthma division of the general medical clinic of the Washington University Dispensary under the diagnosis of bronchial asthma are: hypertension, aneurysm, chronic cardiac diseases, pulmonary tuberculosis, emphysema and obesity.

The following cases will illustrate a few of the wide variety of clinical entities appearing with the diagnosis of asthma; they are presented because the patients stated that they had been previously treated for asthma.

CASE 4.—A man, colored, aged 48, seen, Oct. 9, 1922, complaining of asthma of six weeks' duration, suffered from dyspnea on exertion and nocturnal dyspnea. The salient features of the examination were aneurysm of the decending aorta, by fluoroscopic examination, and a positive Wassermann reaction.

CASE 5.—A woman, white, aged 56, seen, March 24, 1922, complaining of asthma since December, 1919, at the age of 19 years had an attack of asthma which lasted for three days and was relieved by compound licorice powder. At the age of 36 years, she returned to St. Louis from San Francisco, and had a similar attack, occurring in the fall and lasting until late spring. She returned to St. Louis in the fall of 1919, and again commenced having difficulty in breathing. Since the onset of the trouble in 1919, asthma consisted of dyspnea on exertion and orthopnea. The patient was an obese woman, 5 feet 3 inches tall, and weighing 217 pounds (98.2 kg.). The family history for all allergenic phenomena was unreliable. Salient points of the physical examination were: blood pressure, systolic, 180, diastolic, 90; pulse rate, from 90 to 100, and pretibial pitting. The electrocardiogram shows left ventricular preponderance. Cutaneous sensitization tests were negative. After appropriate therapy for the evident decompensation, the patient was placed on a reduction diet, and when last seen weighed 171 pounds (77.7 kg.). It is also interesting to note that at this time the blood pressure was 120, systolic; 80, diastolic. Commencing with this reduction, there has been improvement of her dyspnea. Despite the previous history, which might lead one to believe that she was, or had been, suffering from seasonal bronchial asthma, she passed through the last ragweed season without any symptoms referable to sensitization. We felt certain that this would be the case on account of the negative tests obtained with pollen.

CASE 6.—A man, married, aged 46, seen, Nov. 21, 1922, complaining of asthma, for which he had been treated for the last twelve years, with dyspnea on exertion and nocturnal dyspnea, the latter being relieved by productive expectoration, had had no spontaneous asthmatic attacks. He had lost 50 pounds (22.7 kg.) during the course of his illness. The essential feature of the physical examination was an advanced pulmonary tuberculosis, which was substantiated by roentgenologic studies of the lungs and the presence of many tubercle bacilli in the sputum. It is unnecessary to point out that this man lost twelve years of proper treatment by being passed along as an asthmatic.

CASE 7 (Courtesy of Dr. A. E. Strauss, director of heart clinic).—A man, colored, aged 68, seen, Feb. 20, 1922, stating that he had been treated for bronchial asthma for the last year, complained of smothering spells and orthopnea. As a result of examinations, pulsus alternans, chronic myocarditis, hypertension and general arteriosclerosis were diagnosed.

In this group of cases, we have patients treated for asthma for periods varying from twelve years to six weeks, in whom the dyspnea was but the symptom of a condition unrelated to the allergenic phenomena. Also, it is to be emphasized that the symptom "asthma" in these cases consisted of orthopnea and dyspnea on exertion, and that the age of onset was late in life.

I do not desire to minimize the physical examination, for it is of invaluable assistance in establishing the differential diagnosis. However, it is unfortunate that there are no physical findings typical of bronchial asthma. During an attack, the prolonged wheezing expiration heard and the expiratory effort seen will come nearer identifying the attack as a result of bronchospasm than any other physical finding, but it will not definitely class the case as one of bronchial asthma. It is difficult to differentiate the cause of an attack of paroxysmal dyspnea by physical examination alone, many clinical entities giving similar pictures. Between attacks, it is more usual for the nonsensitive cases to have the physical findings of chronic bronchitis contrasted, with certain exceptions, with the clear chest of the true asthmatic between attacks.

We have available, then, three factors with which to build up our diagnosis of bronchial asthma: the history of similar symptoms in the antecedents, the age of onset and the typical symptomatology of the true asthmatic. This conception does not relegate the sensitization tests into disuse, for they remain the keystone of the diagnosis. A positive sensitization test, proved to be the etiologic factor by production of the dyspnea through exposure to the protein which gave the positive reactions, makes the diagnosis of bronchial asthma, even if the factors before mentioned were all negative. On the other hand, negative sensitization tests in a patient with an early age of onset, the symptomology of a true asthmatic and a hereditary influence could properly lead to a diagnosis of bronchial asthma. The negative tests may be due to the fact that one has not tried the proper protein, that the product used has deterioriated or that the patient is sensitive to a protein hitherto unsuspected as a causative agent. The knowledge concerning etiologic factors in bronchial asthma advances very rapidly. It is but recent that house dust,[11] glue,[12] the dander of the rabbit[13] and goat hair[11] have been implicated, to any extent, as causa-

11. Cooke, R. A.: Studies in Specific Hypersensitiveness, IV, New Etiological Factors in Bronchial Asthma, J. Immunol. **7**: 147 (March) 1922. Vander Veer, Albert, Jr.: The Present Status of the Treatment of Hayfever and Asthma, Am. J. M. Sc. **164**: 97 (July) 1922.

12. Cooke, R. A.: Studies in Specific Hypersensitiveness, III, On Constitutional Reactions: The Dangers of the Diagnostic Cutaneous Tests and Therapeutic Injection of Allergens, J. Immunol. **7**: 119 (March) 1922.

13. Ratner, Bret: Rabbit Hair Asthma in Children, Am. J. Dis. Child. **24**: 346 (Oct.) 1922; M. Clin. N. America **5**: 1129 (Jan.) 1922; Herman, Harold (Footnote 7). Cooke, R. A. (Footnote 11). Larsen, N. P., and Bell, S. V.: Classification and Management of Asthma in Children, Am. J. Dis. Child. **24**: 441 (Nov.) 1922.

tive agents. However, Sewall,[14] in 1914, reported a case of asthma related to him by V. C. Vaughan, Jr., due to exposure to rabbits. Vander Veer [15] notes, in a summary of cases investigated since 1917, that his percentage of undiagnosed cases has decreased from 29 in 1917 to 17 in 1920, owing to the increasing knowledge of new etiologic factors.

As examples of difficulties encountered, Cases 8, 9 and 10 are presented.

CASE 8.—A girl, aged 10 years, seen in the asthmatic division of the general medical clinic, Sept. 14, 1922, with complaint of asthma existing for two years, the difficulty in breathing following a persistent head cold with copious watery nasal discharge, and the attacks being distinctly nonseasonal, since onset of illness had done considerable sneezing, sometimes in paroxysms. Since February 28, she had been under observation in the pediatric service. From April 3 to June, she was under observation in the Children's Hospital, during which time there were no asthmatic attacks. Suppuration in the ethmoidal and sphenoidal sinuses, and infected tonsils and adenoids were the outstanding features of the examination. After some local treatment in the nose and throat clinic and a resumption of the asthmatic attacks, the patient reentered the Children's Hospital, July 6, and had most thorough laryngologic operative work done. During the period of her stay in the hospital, she had no asthmatic attacks, but very shortly after her return home the asthmatic attacks recommenced. We have seen this patient in an effort to determine the etiologic factor. She has given borderline positive reaction to cat and to camel hair. There has been no specific treatment, but a search for the source of contact with the offending protein has been made. The attacks became rather severe during the latter part of December, and she reentered Children's Hospital the first week of January. She is still there at the time of writing, and has been asthma free ever since. In this case, to be noted are the onset with copious watery nasal discharge; the purulent nasal condition, being secondary infection; the operative relief of the evident pathologic condition, without influence on the asthmatic attacks, and the prompt relief, without specific treatment, by removal from her usual environment.

CASE 9.—A woman, white, married, aged 33, who entered Barnes Hospital with extreme dyspnea, a condition of three weeks' standing, has just returned from the West, where she had gone thirteen years previously on account of attacks similar to the one she had at the present time. She became progressively better while under our observation in the hospital, without any particular treatment. Cutaneous sensitization tests were negative, as were the general physical examination and all laboratory findings. We have heard recently of this patient, and she is again having attacks of paroxysmal dyspnea. Questioning has brought out the fact that during the first attack of paroxysmal dyspnea, thirteen years ago, she was working in a grocery store and living in quarters above it; that at the present time, she is similarly situated, and that while in the West she was not so situated.

CASE 10.—A woman, white, aged 40, who was seen, Oct. 18, 1921, complained of asthma of ten years' standing, which had become progressively worse for the last two or three years. Her attacks were associated with exertion and occurred at night, but she also had spontaneous attacks during the day time. At the time of examination at the dispensary, she was in evident respiratory distress. She was placed in Barnes Hospital for study. During her stay there, she had no asthmatic attacks. Exercise tolerance tests produced dyspnea. Cutaneous tests were negative. Roentgenograms of her lungs were interpreted as revealing pulmonary tuberculosis. Frequent sputum examinations did not show tubercle bacilli. At this admission, she was not considered as having bronchial asthma, and it was thought that she had dyspnea on exertion as the result of either a cardiac or a pulmonary condition. After her discharge from the hospital, she was seen again. The asthmatic attacks recurred after her return home from the hospital.

This patient has had three admittances to Barnes Hospital with practically immediate relief from the asthmatic attacks, and attacks have occurred almost immediately on return to her home. Many cutaneous tests have been made on this patient, and one obtains only suspicious positive reactions to the keratoproteins.

14. Sewall, Henry: Some Relations of the Brain and of the Olfactory Apparatus to the Processes of Immunity, Arch. Int. Med. 13: 856 (June) 1914.
15. Vander Veer, Albert, Jr. (Footnote 11, second reference).

These three cases can be diagnosed as bronchial asthma, despite inconclusive cutaneous reactions, because prolonged observation has shown that in these patients the attacks occur only in certain localities; they give a typical symptomatic history, and have an early age of onset. From our observations, we conclude that they are sensitive to a protein peculiar to their environment. They readily fall into the class of dust asthmatics, recently called to our attention by Cooke and Vander Veer. It is believed that dust is an etiologic factor in some cases only so far as it contains the offending protein. In one of the instances cited, we have not found the offending protein; in the other two, we are suspicious that they are sensitive to one of the keratins.

CONCLUSION

I desire to stress the fact that in addition to a thorough physical examination, a painstaking history gives us the diagnostic solution of many of our cases of paroxysmal dyspnea. It is a history that requires patience, thoroughness, system and intelligent cooperation on the part of the patient. Such a history, with the information obtained from sensitization tests, and complete physical examination, makes it possible for us to restrict the term bronchial asthma to those conditions the result of allergenic reaction. We should inculcate the fact that bronchial asthma is an allergenic manifestation characterized by recurrent attacks of paroxysmal dyspnea, due to spasm of the bronchioles, developing as the result of exposure to a foreign protein to which the individual is sensitized; and thus eliminate such terms as cardiac, renal, uremic and winter asthma. The application of the term asthma to any other condition is a nosologic error, alike confusing to the medical profession and misleading to the patient.

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Factors Affecting Plankton.—Some years ago, it was said the degree of pollution of a stream was indicated by certain species of plankton, a collective name for the minute free-floating organisms which live in practically all natural waters. While this has never been disproved, other factors which require prolonged study must be considered. In a bulletin on the self-purification of the Ohio River, the U. S. Public Health Service points out that among the sanitary problems awaiting solution are: (1) the relations between plankton and the pollution of streams; (2) the correlation of this fact and other known factors, and (3) the mechanism of these and other factors in the self-purification of water. Plankton are subjected to many hazards. As they are carried down stream their number varies with the depth, velocity, and turbidity of the stream, with the temperature and amount of sunlight and organic matter, with the increase and decrease of other plankton that form their chief food. Sluggish water favors multiplication in most plankton; flood waters interfere with their feeding and bury them under sand and mud. Cold weather decreases their number; warm weather increases it. Pollution, in brief, is only one factor that affects the number and kind of plankton in a stream, and before any deduction can be drawn from them concerning pollution, it is necessary to know many other factors—industrial acids entering the stream, weather conditions, floods, etc.—which vary with each stream and at almost every location on a stream.

REFLEX ANURIA

REPORT OF CASE WITH UNIQUE BLOOD CHEMISTRY FINDINGS AND AN UNUSUAL APPLICATION OF THE DUODENAL TUBE *

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If the statement so often repeated is true that medical progress occurs in cycles, with equal verity it may be stated that we are now in the cycle of physiologic chemistry. Fortunately, our own work has been guided by men in the forefront of this movement of whose studies and advice we have freely availed ourselves, being taught thereby, from a surgical standpoint, when to lay hands on and when to keep hands off an operative urologic case. They have, at least in the borderline case, converted a clinical "hunch" into something approximating a reasonable degree of certainty. Notable in the above mentioned efforts has been the striking benefit to the clinician and the surgeon afforded by the relatively simple and accurate methods of blood analysis introduced by Folin, Benedict, Myers and others. Following the introduction of these methods, a considerable amount of valuable clinical data has already been accumulated. In this connection, we desire to record a case, with the idea that it may serve as a stimulus to others to publish findings pertinent to this field of endeavor, so that the knowledge derived therefrom may soon be sufficient to standardize, if possible, our points of view on this subject.

REPORT OF CASE

Mr. L. M., aged 35, a bank clerk, native of Canada, admitted to the hospital, March 7, 1922, complained chiefly of pain on the left side, persisting at irregular intervals for the last five months. The family history was negative, and there was nothing of note in the past illness save a loss of weight of about 10 pounds (4.5 kg.) in the last five years. The present illness began about five months prior to the patient's admission to the hospital, with pain in the upper left quadrant of the abdomen. This pain suddenly appeared after dinner. It was of a sharp, colicky nature, radiating to the left testis, persisting with the same intensity for about a week, and necessitating administration of codein and heat for its alleviation. At this period, urination occurred from eight to ten times a day. Dysuria was absent. Vomiting was recorded three hours after the onset of pain. The patient thought that during the first week blood had been observed in the urine (his wife called the attention of his physician to it). Marked rectal and vesical tenesmus was also noted. The temperature rose as high as 103.8 F. the first night and remained at 102 for about the first week. The second week, the temperature was about 100. No chills or chilly sensations were experienced.

Following the first attack, the patient had about six similar attacks, though not as severe as the first, nor with the temperature excursions then noticeable. At the time of admission, the urine had a specific gravity of 1.025, and was negative for protein and sugar. Three succeeding examinations gave similar reports, except that triple phosphates and oxalates, a few leukocytes and some mucus were found. Later examinations revealed a trace of protein and a few hyaline casts. From the foregoing history, a tentative diagnosis was made of left sided ureteral calculus. The patient was admitted to the medical department for gastro-intestinal roentgen-ray examination, since the patient as well as his family physician, who was a relative, wished to rule out the gastro-intestinal tract as the offending factor.

Aside from the fact that the patient was a poorly developed and indifferently nourished person, the physical examination brought out nothing worthy of note. The roentgen-ray examination, March 10, gave comparatively negative findings. The first roentgenographic examination of the genito-urinary tract showed what appeared to be kidney shadows of comparatively normal contour and illumination, although the left was a shade larger than the right; the latter was lower in its position on the two exposures to such a degree that in one it was above, in the other below, the level of the transverse process of the third lumbar vertebra, whereas the left kidney had retained its position. The upper urinary tract was clear of calculi or calcareous deposits. However, on each side of the pelvis appeared several pea-sized shadows. On the right side, these were fairly low and outside the course of the ureter, and, therefore, probably phleboliths. On the left side, there appeared a single smaller shadow, probably also a phlebolith. On the other hand, it was necessary to consider a calculus.

On the morning of the 15th, another roentgen-ray study of the genito-urinary tract was undertaken. Here, it was noted that a mass appeared overlying the lower pole of the left kidney, and a pyelogram was suggested to confirm this finding. March 15, the patient was turned over to one of us for examination of the genito-urinary tract, with these findings: An exploratory examination with a 16 F. McCarthy cysto-endoscope revealed the bladder, both ureteral orifices and the internal sphincter normal; the bladder was intolerant to inflow of fluid above 8 ounces; the urethra was deep; the verumontanum was somewhat enlarged; there was moderately increased congestion.

On rectal bimanual examination, both lateral lobes of the prostate were similar in outline and size, and not enlarged. Nothing of significant nature was elicited. Abdominal palpation was negative, and no subrenal tumefaction was found, as indicated in the roentgen-ray examination. On advice, further exposure to roentgen rays was deferred for a time, and a differential renal function test was made. The urethra would not admit a cystoscope larger that a 16 F., so we were limited to catheterization of one ureter, the left, which admitted a No. 6 ureteral catheter to the renal pelvis. A specimen collected was sent to the laboratory for microscopic and cultural findings. Aside from a few pus cells, these were negative. A fifteen-minute phenolsulphonephthalein estimation was made, and from the left side but 3 per cent. was obtained, whereas, from the bladder, through the cystoscope that represented the right side, together with possible leakage along the left ureteral catheter, the return amounted to 40 per cent. The patient had a pronounced reaction from this examination. After a day or two, he was permitted to go to his home for a short sojourn until the roentgenologist deemed it advisable to take a pyelogram.

March 22, an 18 F. cysto-endoscope was introduced, and the left ureter was catheterized to the pelvis, a roentgenogram being taken before and after the introduction of 20 c.c. of a 25 per cent. solution of bismuth and ammonium citrate. After the exposure, this solution was drained off, apparently completely. The roentgenogram showed a dilated renal pelvis, the shadows previously noted being extra-urinary. Following this, the patient had a restless night, and vomited a moderate amount of light colored fluid. The next day, he complained of headache, and vomited continuously, but the bowels moved at regular intervals. The usual report on urine voided was noted, but the amount was not stated. Treatment given at this time consisted of applications of a Pressnitz dressing to the abdomen, and the administration of alkalis, cerium oxalate and bismuth subcarbonate. On the 25th, the vomiting continued. A specimen of urine was sent to the laboratory, the amount of which was not stated. The therapy employed consisted of colonic irrigations and a Pressnitz dressing. On the 26th, the patient voided, but the amount was not recorded. Apparently from the 27th (five days after the pyelogram was taken) a condition of comparative anuria supervened and the patient grew increasingly restless, with more or less constant vomiting of light brownish fluid. From 6 a. m. on the 26th to 6 a. m. on the 29th, three days, the patient voided 48 c.c. of urine. The treatment comprised administration of

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infusion of digitalis, and the bromin sodium salicylate, colonic irrigations with sodium bicarbonate, and employment of the rectal drip and of heat. Subsequently, the patient expelled the drip, and he became intolerant to the use of the rectal tube so that this avenue of relief was closed. At 8 a. m. on the 29th, he voided 24 c.c. of urine.

To clear up the possibility of a retention of pyelographic fluid in the renal pelvis, an attempt was made to pass a ureteral catheter up the left side, but an obstruction was encountered from 6 to 8 cm. from the vesical orifice of the ureter. This obstruction was not met in the previous examinations. In the late afternoon of the 30th, the advisability of double renal decapsulation was considered, but the majority opinion opposed this procedure on the ground that it was of dubious value. The usual conservative measures of hot packs, hypodermoclyses of 1,000 c.c. physiologic sodium chlorid solution were employed. Shortly after this, the patient voided 205 c.c. at one time. The urinary output from the 28th was: 28th, 16 c.c.; 29th, 210 c.c.; 30th, 205 c.c.; 31st, 107 c.c.

On the 31st, 500 c.c. of blood was withdrawn, and 500 c.c. of 3 per cent. sodium bicarbonate solution was introduced intravenously. On this day, the feasibility of employing the duodenal tube was discussed. This suggestion appealed to one of us as offering the only possible means of assistance, since the vomiting had almost reached the projectile stage, and the patient was intolerant to anything by rectum. The twenty-four hours of the day the duodenal tube was first employed, beginning in the late afternoon, the urinary output was 170 c.c. Next day, the output was 330 c.c. Medication employed through the duodenal tube was 5 per cent. glucose solution, 2 per cent. sodium bicarbonate, and, for catharsis, sodium sulphate. On the day after, the patient voided 1,055 c.c., and on the next succeeding day 2,250 c.c. For some days prior to this, he had the typical appearance of a nephritic, being more or less edematous, with the face rather puffed, palpebral orifices narrowed, edema of the extremities, and twitching and hiccup of a most persistent nature. The feeding through the duodenal tube consisted of peptonized milk, sodium bicarbonate, cream, water and glucose solution, about 1,000 calories every twenty-four hours.

The patient was now in a semistuporous condition except when aroused or during the feeding. At other times, he would lie with the eyes closed, although his responses were almost always clear. Following this phenomenal improvement in the renal output, April 3 the duodenal tube was discontinued. The patient was put on very small quantities of spinach soup, cauliflower, sweet potato, baked apple and lemonade. The feedings were given in very small amounts. The urinary output during this twenty-four hours was 2,250 c.c. This diet was continued another day, and on the evening of the 5th, after two days without the tube, the patient had a definite convulsion, lasting fifteen minutes. He was placed in hot packs for twenty minutes, but was seized with another convulsion lasting ten minutes. Chloral and bromids were administered; 500 c.c. of blood was withdrawn, and 500 c.c. of 5 per cent. glucose solution was administered intravenously about three hours after the last convulsion. Use of the duodenal tube was resumed the following morning, the 6th, and continued until the 12th. It was introduced at times merely for feeding; at others, it was retained for a period of from four to six hours. At one period, it was left in situ for forty-eight hours without removal. Later, in the employment of the tube, a feeding would be followed by a six hour wait, when a half gallon to a gallon of water would be passed through the tube for the purpose of irrigation. Immediately following the onset of the grand lavage, stools increased from two each day to from ten to fifteen. The stools, which at the outset of this procedure gave every evidence of profound putrefactive changes, promptly lost these qualities.

In the accompanying table are tabulated the chemical changes in the blood of the patient during his stay in the hospital. It will be noted that the chemical analysis of the blood on admission gave normal figures for urea nitrogen, sugar and chlorids. The uric acid (4.6) is slightly but definitely above normal. This increase of blood uric acid, in spite of the restricted hospital diet, coupled with the presence of a trace of protein and blood cells in the urine, would signify a mild impairment of kidney function at this time. It has frequently been pointed out by Myers [1] and his co-workers that the uric acid concentration of normal blood is from 2 to 3 mg. per hundred cubic centimeters, but as the permeability of the kidney is lowered in the initial stages of renal impairment, this is first indicated in the analysis of the blood by an increase in the concentration of uric acid. Later in the progress of the damage to the kidney function, the urea accumulates in the blood; but in general there is no perceptible rise in the creatinin until the urea nitrogen has been doubled or more than doubled.

Kast and Wardell [2] have placed the urea nitrogen content of normal blood between 12 and 15 mg. per hundred cubic centimeters, and Folin has stated that the maximum concentration of this component in normal blood is from 14 to 15 mg. per hundred cubic centimeters. For normal individuals, the creatinin of the blood amounts to from 1 to 2 mg. per hundred cubic centimeters. Myers and Killian [3] have shown that the blood creatinin furnishes a better prognostic insight into the extent of the involvement of kidney function than either a test of the urea of the blood or the phenolsulphonephthalein test. Many cases with a creatinin concentration of 4 mg. or less have shown improvement under treatment; cases with more than 4.5 or 5 mg. almost invariably terminate fatally.

Chemical Changes in the Blood

Date	Uric Acid, Mg. per 100 C.c.	Urea Nitrogen, Mg. per 100 C.c.	Creatinin	Sugar, per Cent.	Chlorids, per Cent.	Carbon Dioxid Combining Power
3/13/22	4.6	12.1	....	0.117	0.487	....
3/27/22	...	62.5	12.5	0.230	0.413	50.4
3/30/22	...	83.3	17.0	0.246	0.400	31.9
3/31/22	...	92.0	23.1	0.290	0.357	21.4
4/ 2/22	...	98.6	20.4	0.226	0.350	55.7
4/ 3/22	...	82.0	20.0	0.270	0.326	81.5
4/ 4/22	...	104.0	21.2	0.332	0.300	63.0
4/10/22	...	56.0	9.2	.....	0.450	56.0
4/15/22	...	48.0	4.4	.....	0.538	62.6
4/22/22	...	12.9	3.2	0.141	0.550	60.7
5/ 4/22	...	9.7	2.7	0.100	0.513	56.8
7/11/22	4.2	16.0	....	0.097	0.550	....

	Comment
3/22/22	Pyelogram
3/25-26/22	Oliguria
3/27/22	Anuria; obstruction noted in left ureter
3/28-31/22	Daily urine excretion varied from 16 to 205 c.c., about one seventh total fluid intake
3/28-31/22	P. M., about 1,000 c.c. of alkaline fluids were given daily in infusions, hypodermoclyses and rectal drips
3/31/22	P. M., duodenal tube introduced; solutions of glucose and sodium bicarbonate and tap water given through duodenal tube
7/1-3/22	Fluid intake, from 780 to 3,840 c.c.; daily urine excretion, from 170 to 1,055 c.c.
4/3/22	Alkali therapy discontinued
4/3-4/22	Administrations of fluids and medications and feedings through duodenal tube discontinued
4/4/22	P. M., convulsions
4/5-12/22	All fluids and feedings through duodenal tube
4/8/22	Calculus passed in urine
5/6/22	Patient left hospital

March 27, after the period of oliguria and anuria, we find the urea nitrogen has risen to 62.5, and the creatinin to 12.5 mg. per hundred cubic centimeters. The concentration of sugar in the blood has been doubled, but the chlorids are diminished. Following the suggestion of Myers and Short,[4] the chlorids of the whole blood rather than the plasma have been determined, and these authors place the normal range at from 0.45 to 0.50 per cent. The carbon dioxid combining power shows a beginning decrease in the alkali reserve of the blood plasma. On this date, an obstruction was encountered during an attempt to catheterize through the left ureter. Three days later, March 30, the urea nitrogen has reached 83.3 mg., and the creatinin, 17.0 mg., and twenty-four hours later, these components have increased to 92.0 and 23.1 mg., respectively.

1. Myers, V. C.: Practical Chemical Analysis of Blood, St. Louis, G. V. Mosby Company, 1921.
2. Kast, Ludwig, and Wardell, E. L.: Urea in Human Blood, Arch. Int. Med. **22**: 581 (Nov.) 1918.
3. Myers, V. C., and Killian, J. A.: Am. J. M. Sc. **157**: 674 (May) 1919.
4. Myers, V. C., and Short, J. J.: J. Biol. Chem. **44**: 47 (Oct.) 1920.

It is evident from a comparison of these figures that the nitrogenous waste products were rapidly accumulating in the blood, but all to an equal degree. This fact, as Foster[5] has demonstrated, indicates an anuria of mechanical origin, either in the kidneys or in the ureters. There is, moreover, a precipitous drop in the carbon dioxid combining power to 31.9, March 30, and to 21.4, March 31. During this four day period, about 1.5 to 2 liters of alkaline fluids had been given in infusion, hypodermoclyses and rectal drips. It is significant that, in spite of this large fluid intake, the retention of the nitrogenous waste products progressed and a severe acidosis developed.

There is a well established clinical doctrine stressed by numerous experimentalists and clinicians that cases of nitrogen retention require a large volume of fluid intake to provoke a diuresis since the damaged kidney can excrete the nitrogen compounds at but a low concentration. This principle finds confirmation in the experiments of Foster, who showed that in such cases the amount of nitrogen excreted in the urine bears a definite relation to the volume of urine. It is evident from the blood finding that the introduction of fluid through these channels had little or no influence on the excretion of urine and, consequently, little or none on the retention of nitrogen. The daily volume of urine ranged from 16 to 205 c.c., only one seventh of the total fluid intake.

On the afternoon of March 31, the duodenal tube was introduced, and through it the administration of fluids, medication and feedings begun. For the subsequent four days, the fluid intake varied from 780 to 3,840 c.c., and the urine excretion rose from 170 to 1,055 c.c. A large quantity of fluid was also lost in the frequent semifluid stools passed during this period. It will be noted that although there was a slight rise in urea nitrogen, April 2, to 98 mg., it dropped the following day to 82 mg., and the creatinin was decreased to 20 mg. The influence of this mode of therapy on the alkali reserve of the blood was more striking. Van Slyke, Stillman and Cullen[6] have shown that the normal blood has an alkali reserve equivalent to from 53 to 70 c.c. of carbon dioxid per hundred cubic centimeters of plasma. A decrease of the carbon dioxid combining power below 50 per cent. by volume indicates an alkali deficit, or acidosis, whereas an increase above 77 per cent. by volume denotes an alkali excess, or alkalosis. The carbon dioxid combining power, April 2, had reached 55.7, and, April 3, 81.5.

The drop in the carbon dioxid combining power of the blood plasma from 50.4 to 21.4 within four days demonstrated an extreme depletion of the blood plasma base despite the administration of large amounts of sodium bicarbonate in colonic irrigations, rectal drips and intravenous infusions. Hence, sodium bicarbonate was added to the duodenal lavage, but the use of this alkali was controlled by changes in the carbon dioxid combining power of the plasma. April 2, the alkali reserve of the plasma had risen to 55.7 and, April 3, to 81.5 per cent. by volume. To avoid the development of an alkalosis, the alkali therapy was discontinued. Since it was thought that the patient had passed the most critical period of his damaged renal function, the duodenal tube was removed, and for the subsequent two days feedings were given by mouth. The night of April 4, the patient had two severe convulsions. A specimen of blood obtained at this time showed that the urea nitrogen had risen to 104 mg. and the creatinin to 21.2 mg., whereas the carbon dioxid combining power had dropped to 63. The duodenal tube was again introduced, April 5, and used until April 12, for feedings and lavage. Since the carbon dioxid combining power remained well within normal limits, the use of alkalis in the fluids was abandoned. Tap water alone served for the lavage. April 8, the urine contained several brick-red fragments of a calculus. These were recovered, dried and weighed. The total weight of the fragments was 0.5 gm. They were composed of urate and ammonium magnesium phosphate crystals embedded in material of a protein nature.

It is of interest to note that the decrease of the urea nitrogen preceded the drop in the creatinin. A comparison of the relative concentration of the chlorids with that of the nitrogenous waste products and sugar reveals an interesting phenomenon. As the nitrogenous compounds accumulated in the blood, and the sugar rose with them, the concentration of the chlorids progressively diminished. April 4, when the urea nitrogen and sugar had reached the highest levels, 104 mg. and 0.332 per cent., respectively, the chlorids had dropped to their lowest figure, 0.300 per cent. But after this time, the retention of the nitrogenous compounds diminished and the chlorids simultaneously rose to an abnormally high concentration. An explanation of the significance of this balance in the crystalloids of the blood cannot now be presented; however, analogous changes have been observed by one of us[7] in cases of mercuric chlorid nephrosis.

5. Foster: Harvey Lectures, 1921.
6. Van Slyke, D. D.: Stillman, E., and Cullen, G. E.: J. Biol. Chem. **30**: 401 (June) 1917.

SUMMARY AND CONCLUSIONS

A patient of low resisting capacity, a bank clerk, who had been indoors for a number of years and who entered the hospital with most of the clinical symptoms of a ureteral calculus, at the time of admission to the hospital gave blood chemistry findings within normal limitations, save for relative high uric acid. This, with the urinalysis, might seem to indicate a mild impairment of kidney function, as there was at times a low specific gravity, with a trace of protein and an occasional hyaline cast. Cystoscopy was performed, with a little more reaction than usual, March 15. On the 19th, cystoscopy was again performed, and the ureters were catheterized. A relatively low function was shown for the left side, 3 per cent. for fifteen minutes, it being presumably the affected side; and roentgenographically a shadow of bean shape was revealed, resembling a tumefaction encroaching on the lower third of the left kidney. This was ruled out on the 22d, with a pyelogram, 20 c.c. of 25 per cent. bismuth and ammonium citrate solution being used. The patient for several days was quite restless, and there was some vomiting. On the fifth day thereafter, he developed anuria of a very pronounced character, which became practically complete, two days later.

Again a cystoscopic examination was made. An attempt to introduce a ureteral catheter in the affected side revealed an obstruction at 6 to 8 cm. The inferential diagnosis at first was toxic nephritis, as the result of pyelography. An alternative diagnosis was: displacement of a ureteral calculus (which failed to throw a shadow, roentgenographically), followed by an obstruction on this side, and a reflex anuria on the other. All the customary remedial measures, such as medication by mouth, rectal drips, colonic irrigations, hypodermoclyses; bloodletting with intravenous infusion of glucose solution and sodium bicarbonate having been exhausted, the patient continued in a condition of uremia, with pronounced muscular twitching; semicomatose, with projectile vomiting, expulsion of the rectal drip, etc. His insusceptibility to these measures led us to the only remaining procedure offering relief: the use of the duodenal tube, which was attended with spectacular results. First, there was cessation of vomiting, reducing it to a negligible factor; second, an immediate and tremendous increase in urine output was secured, with but slight change in the blood chemistry findings. Four or five days later, lavage of the entire intestinal tract with from a half gallon to a gallon (2 to 4 liters) of tap water, three times every twenty-four hours, increased the number of stools by from ten to fifteen a day. There was a pronounced reduction in the blood retention, which dropped in six days from 104 mg. of urea nitrogen and 21.2 mg. of creatinin, to 56.6 mg. of urea nitrogen and 9.2 mg. of

7. Killian, J. A.: J. Lab. & Clin. Med. **7**: 129 (Dec.) 1921.

creatinin. Five days later, there was a reduction to 48 mg. of urea nitrogen and to 4.4 mg. of creatinin, until finally there was 9.7 mg. of urea nitrogen and 2.2 mg. of creatinin.

Another feature of note was the pronounced albuminuria coincident with the culmination of the symptoms following pyelography. The passage of the calculus has cleared up the diagnosis: in all probability, the patient had a ureteral calculus, which was dislodged at the time of the last ureteral catheterization, producing an obstructive anuria on this side, with a reflex anuria of the opposite side.

The interesting questions of the renorenal reflex and the ureterorenal reflex are here involved. By this, of course, is understood the secretion inhibiting influence exerted by a sudden obstruction of one kidney or ureter on the healthy kidney of the opposite side. In this connection, Pflammer [8] states that opinions are still greatly at variance concerning the renorenal reflex. He goes on to say that the existence of this so-called renorenal reflex is by no means generally admitted. He previously investigated the reflex vesicorenal modification of water secretion through the automatically regulated influence of repletion of the bladder, but he was able to elicit a reflex from one ureter to the opposite kidney through irritation of the mucosa. He positively demonstrated a reflex anuria of both kidneys and stimulation of the vasomotor center and a reflex anuria of one kidney derived from the corresponding ureter; but contralateral anuria, namely, anuria derived from the opposite kidney or its ureters, is, so he states, hypothetic. Only case reports can be accepted as proof of a reflexly inhibited secretion in which the apparently reflexly inhibited kidney was shown to be healthy. It has been established that the urinary secretion not only is dependent on the blood supply of the kidney, but also is perhaps even more delicately governed by the venous drainage. In view of the fact that the vena cava is situated to the right of the vertebral column, it is entirely possible that, in operative manipulations of the right kidney, the left renal vein becomes completely or partly obstructed, owing to the shortness of its veins or other factors, thereby interfering with the urinary secretion.

This author adds that numerous experiments with all sorts of stimuli, with experimentally displaced kidneys under the skin, have invariably left the secretion of the other kidney entirely unmodified. The experiments showed that neither an increased intrarenal pressure nor renal ischemia of one kidney will induce a reflex intermission of the secretion of the other kidney. According to Haines and Taylor,[9] apparently about ten cases of renorenal reflex pain or anuria, or both, have been reported, with complete studies by roentgen ray and catheterization. To this number, we add a personal observation of a man about 38 years old, who had repeatedly suffered from severe right sided renal colic. Examination showed nephrolithiasis of the left kidney with obstruction of the renal pelvis and subsequent hydronephrosis. Nephrectomy was performed, followed by recovery. No phenomena on the part of the right kidney were noted later on. The clinical diagnosis must be centered on the demonstration of the seat of the disease, and a renorenal reflex enters into consideration only provided the kidney is absolutely healthy and functionally efficient. The causes of the recurrence of this reflex anuria apparently are not demonstrable, although the reflex is easily explainable on anatomic grounds. Bartrina [10] states that the renorenal reflex apparently played a part in a case of right sided calculus of the renal pelvis, in which there were severe attacks of renal colic, gradual increase of the urea contents of the urine (sufficient amount of urine), and increase of Ambard's constant.

After the extirpation of the right kidney, the urea contents of the urine rapidly increased to above the normal standard. Finally, Mingazzini [11] states that by means of seventy-five experiments on thirty-three dogs, he endeavored to ascertain how reflex anuria takes place in renal colic during the passage of small calculi through the ureter. At the same time, the functional activity of one kidney was tested during temporary occlusion of the other kidney. In these experiments, he states that the ureter was closed for half an hour by means of elastic clamps. It was found that irritation of the ureter in its upper half did not produce anuria, whereas irritation of the ureter in the upper half of the lower third induced anuria in a series of cases. Compression of the ureter in its upper half induced no change of the entire urinary secretion, although the other kidney was stimulated to do a temporarily increased amount of work. Occlusion of the ureter in its lower half was followed by a modified function of the kidney of the opposite side, sometimes also by anuria. In these cases, the total secretion of the kidney was considerably diminished even before intervention. The operative traumatism of such procedures, as well as the evisceration of the kidney; insufficient general anesthesia, and other similar factors do not by themselves induce anuria. The author emphasizes that the method of temporary compression of the closed ureter may be utilized also, being practiced for the functional testing of the kidneys when the other functional tests, such as ureteral catheterization, are not applicable.

The courage and fortitude of the patient in the case presented were admirable. Though at times in a semicomatose condition, he assisted in the passage of the duodenal tube, often insisting on passing it himself. The results obtained through the use of the duodenal tube in this case were so striking and impressive, we are convinced that this procedure opens a wide field of possibilities: (1) through the enormously increased absorption capacity of the upper intestinal tract as opposed to the lower, as proved by experiments by Killian and Cherry, with phenolsulphonephthalein and other agents, and in this particular case, in the fact that there was little or no absorption of the sodium bicarbonate when introduced in the colonic irrigations and rectal drips, whereas in the bicarbonate administrations through the tube there was rise in the carbon dioxid combining power of the blood so rapid that it became necessary to discontinue it; (2) through the absorption capacity of nitrogenous end-products in the intestinal tract.

It will therefore readily be seen how advantageous is a complete flushing, such as is possible only by means of this tube, especially when urea nitrogen and creatinin retention is of the rapidly cumulative type, as in toxic drugs taken accidentally or with suicidal intent; in postoperative cases, especially following prostatectomy,

8. Pflammer, E.: Ueber Reflectorische Anurie: Giebt es einen Reno Renalen Reflex? Beitr. z. klin. Chir. **122**: 326, 1921; Zur Frage der Reflex Anurie, Ztschr. f. Urol. **14**: 450, 1920.

9. Haines, W. H., and Taylor, K. P. A.: The Reno Renal Reflex, New York M. J. **113**: 197 (Jan. 29) 1921.

10. Bartrina, T. M.: Les réflexes de l'appareil génito-urinaire, Presse méd. **29**: 293 (April 13) 1921.

11. Mingazzini, E.: Contributo sperimentale all esclusions temporenea chiusa di un rene, Clin. chir. **27**: 577, 1920.

nephrectomy, etc., or in any case in which the retention of these products in the blood stream is relatively acute, and the basic kidney substance has not been destroyed by organic change.

We hope that from being regarded as essentially an appliance for internists, the duodenal tube in the immediate future will earn the esteem it merits on the part of the surgical side of the profession.

40 East Forty-First Street.

THE OLD HEAD INJURY CASE

A CLINICAL STUDY OF ONE HUNDRED CASES *

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MINNEAPOLIS

The literature on head injuries has been greatly augmented as a result of the many observations made during the World War. The treatises, however, deal in the majority of instances with the acute cases and early complications.

For several years the opportunity for observing old head injury cases, incurred chiefly during the year 1918, has presented itself. The questions What becomes of the man who has suffered a head wound? How is he able to carry on? What measures does he require as time goes on? are rather vital. The clinical pictures show many and varied symptoms. One is early impressed by the degree of associated disability. The latter phase particularly seemed worthy of special study and prompted a grouping of these cases, aiming at setting down, as far as possible, a fair longitudinal section of the chronic case.

This study deals with 100 patients, all of whom, except two, are now living. It concerns men between 17 and 35 years of age. Data were obtained from records made during the acute phases as well as at subsequent intervals, either in the hospital or in the outpatient clinic, chiefly during the last four years. Not infrequently, the notations on the earliest clinical phases, when the injuries were incurred, were rather meager; nevertheless, many times the history made amends for that deficiency. Essentially complicating diseases were ruled out in the cases of this series.

TABLE 1.—*Etiologic Features*

	No. and Per Cent. of Cases
1. Patients unconscious at time of injury	70
2. Operated on at time of injury or later	57
3. Patients actually wounded externally	97
4. Patients not visibly wounded externally (concussion)	3
5. Scalp wound only	7
6. Scalp and bone wounds:	
(a) Cranial fracture (not gunshot wounds)	31
(b) Gunshot wounds	40
7. Scalp, bone and actual brain destruction:	
(a) Penetrating gunshot wounds	17
(b) Penetrating brain wounds (not gunshot wounds)	2
8. Cysts (all removed)	3
9. Date of injury incurred in years closely averaging 1918	91
Date of injury, 1903 to 1916	9
10. Site of region chiefly involved:	
(a) Frontal	22
(b) Parietal	38
(c) Temporal	13
(d) Occipital	21
(e) Base	3
11. Cerebral abscess (complicating)	3

* Read before the Southern Minnesota Medical Association, Mankato, Dec. 5, 1922.

ETIOLOGIC FEATURES

Table 1 shows that 70 per cent. of the patients had immediate loss of consciousness as a direct effect of concussion. The traumatic deliria come in this group. Fourteen patients gave histories of a period of primary unconsciousness continuing over twenty-four hours. Table 5 is presented to show the relation of these traumatic deliria to permanent complications, including vocational capacity.

More than half, or 57 per cent., of the patients had surgical intervention. The three patients not visibly wounded made uneventful recoveries. Nearly one fifth of the patients suffered penetrating brain wounds. Of these, all excepting one are living. The parietal area was most frequently the site of trauma, the base being affected in only a small proportion.

TABLE 2.—*Symptom Groups*

	No. of Cases
1. Subjective complaints of so-called "head injury syndrome type" (not including psychotic)	80
2. No subjective complaints at all	8
3. Psychosis, persisting	12
4. Having organic neurologic symptoms early	39
5. Permanent organic neurologic symptoms: (Compare Table 4)	44
6. Epilepsy (compare Table 3)	36
7. Vocational ability:	
(a) Totally handicapped	18
(b) Having major handicap with but little occupational ability	35
(c) Minor handicap with fair success	37
(d) Having no trouble at all	10

SYMPTOM GROUPS

Table 2 presents the high incidence of the so-called functional complaints. Of these, headache and dizziness and general irritability are most frequent. Others are insomnia, restlessness, shakiness, black spots before the eyes, a feeling of generalized weakness, loss of appetite, nausea, palpitation, periods of difficult breathing, vasomotor irritability, inability to stand the warmer or colder extremes in climate, varied paresthesias, fainting episodes (not necessarily epileptiform), a feeling of inadequate memory or thinking capacity, the inability to withstand, in short, the usual excesses, strains and exertions. Case 1 illustrates this type:

CASE 1.—S., in November, 1917, was struck in the occipital region by an unloaded hand grenade. He was unconscious two hours, and dizzy and confused for the subsequent three days. After ten days he returned to duty. He remained in the army until April, 1919. He said that during this time he was easily exhausted by the hikes and drills, and for that reason was given the lighter company duties. He felt quite well until the summer of 1920, when headache became more frequent and severe. Sharp pains would come on, affecting his forehead chiefly. In winter the pains were less troublesome. Fatigue would cause the pains to become severer. He also suffered from a dizzy feeling in the head and a general tremulousness. Though sleep was said to be fairly good, he was very easily awakened. He dreamed a good deal. He suffered from dull headache for an hour after rising. He was easily irritated and frightened. He was also very restless. The previous personal history and family history were unimportant. Examination presented a depression in the occipital area the size of a nickel. Roentgen-ray and other findings were negative. The patient is reported as now doing fairly well in his vocation.

The number of persons suffering from definite psychosis is not large. The proportion of permanent invalidity in the nervous system from the objective point of view is a seemingly large one; the same is to be said for the number of true epilepsies. Reactions

to alcohol were not observed. More than half of our patients may be considered unable to sustain themselves by earning their own livelihood. These factors become important in the field of industry.

EPILEPSY

When looking at the list of epilepsies in more detail in Table 3 we note that 36 per cent. of all our patients have this complication; 75 per cent. of the patients with psychosis come under this grouping. The preponderance of epilepsy in cases in which there are injuries

TABLE 3.—*Epilepsy—Thirty-Six Cases*

	No. of Cases
1. Types:	
(a) Jacksonian	6
(b) Sensory	2
(c) Grand and petit mal	21
(d) With psychosis	9
2. Area of head injured:	
(a) Frontal	11
(b) Parietal	21
(c) Temporal	1
(d) Occipital	3
3. Not operated on immediately after trauma	8
4. Cases appearing during first nine months	21
5. Vocational handicap:	
(a) Unable to do anything	12
(b) Seriously handicapped and showing very little occupational ability	10
(c) Carying on in some selected vocation with some success.	14
(d) Having no handicap whatever	0
6. Late operation (a year or more)	13
(a) Cessation of seizures (3 years following operation)	1

to the frontal and parietal areas of the cranium is striking. Only five patients of this series with epilepsy had sustained the brunt of head trauma in areas other than the frontal or parietal. Seizures developed within nine months after injury in a little less than two thirds of the cases in which there was this type of complication. The vocational handicap is pronounced. Worthy of emphasis is the obviously intractable course in spite of late surgical intervention. Of the thirteen patients operated on during a period when the acute symptoms had subsided, only one failed to have recurrence of seizures. This patient was operated on three years ago. Cases 2, 3 and 4 are illustrative:

CASE 2.—G. had been well until March, 1919, when he sustained a skull fracture in an automobile accident. The left parietal region chiefly was involved. He was unconscious four hours. He developed epileptiform seizures six weeks later, which recurred at the rate of one each month until February, 1921, when a surgeon performed a decompression at the site of injury, removing a cyst. Seizures ceased for one year, after which time they recurred. Immediately following the operation in 1921, he developed right sided hemiplegia, residuals of which were present during examination six months later and also one year later. Short intervals of severely painful paroxysms in the paralyzed side were complained of. Some dysphasia was present. No signs of increased intracranial pressure were found. Until May, 1922, he made fair progress in his work as a student in radio engineering, but has been having increasing difficulties since then. Epileptiform attacks with increasing general instability persist.

CASE 3.—L., aged 35, sustained a fracture of the right temporal area of the skull in 1910. No complications were noted. He had his first epileptiform seizure during army service in 1918. He worked as a railroad conductor five months, when his employers learned of his seizures and discharged him. When examined in April, 1920, roentgenograms were negative and the optic fundi were normal. A typical grand mal attack was observed in the hospital. He underwent a decompression operation three months later at the site of the old fracture. He was placed on phenobarbital (luminal). Two years later he reported that he had no fainting spells and that he was getting along well in his work as a freight train conductor. He was given his old job back a year after the operation.

CASE 4.—A., aged 27, was struck by a steel pipe in the right frontal region, eight years before, and was unconscious twelve hours. A decompression operation over the site of the injury was performed. He suffered from stiffness and weakness in his left hand until a year later, when another surgical operation was performed, at which a piece of loose bone was removed and a bone graft was introduced. In 1918 he was kicked accidentally by another sailor at the site of the old wound, and was again unconscious. He could not work because of weakness and twitching in the left side of his body. This increased, and considerable mental depression developed. Another operation was performed in Cincinnati in 1921, but in three months the former complaints of dull pain in the head, irritability, restlessness, sleeplessness, depression, difficulty in mental concentration, and weakness all returned.

PERMANENT ORGANIC NEUROLOGIC FINDINGS

A very detailed and elaborate analysis of the permanent organic neurologic findings was not always feasible, but a rather rough classification is attempted. Motor phenomena are most frequent. The incidence of irregularity in pupillary reactions and speech disorder deserves particular note. Of the nine patients giving abnormal pupillary reaction to light or presenting irregular outlines, five sustained determinable penetrating brain tissue injury, whereas in four cases fracture of the cranial bone only could be satisfactorily demonstrated to have occurred at the time of injury.

PSYCHOSIS

Of our twelve chronic mental cases, there was epilepsy in nine. We have looked on the mental symptoms in these nine cases of dementia as being directly associated with the epileptic constitution. They invariably followed the onset of the seizures.

CASE 5.—R. sustained a gunshot wound of the parietal area of the brain in 1918. The bullet was removed at a field hospital. Right sided motor palsy has persisted since the period of injury. He developed epileptiform seizures within several weeks after trauma, and had been entirely unable to do any work. When interviewed two years after the injury, he limped in the right foot; contractures were present in the right arm. The left pupil presented only a very little reaction to light and accommodation. Vision, including the fields, was normal. The speech was slow and hesitating. The psychomotor activity was markedly reduced. The memory was faulty, and a tendency to confabulate was noted. Serologic findings were negative throughout. He fell into the hands of a surgeon six months later, and was operated on to "relieve pressure on the brain." Two months after this operation he was reported to be in the same condition as he had been prior to operation. More recent reports show more deterioration.

The three cases in which there was no epilepsy had unmistakable histories of psychosis prior to the trauma. Thus, there is now not one case which could be labeled unqualifiedly as "traumatic psychosis."

CASE 6.—P., aged 30, in 1919 fell 50 feet in the coal bunker of a transport, and fractured the bones in the left frontal region. He was unconscious four hours. He remained in the hospital four months, after which he was discharged from the naval service. He had headaches and dizziness after the time of the injury. When seen in the summer of 1921, he complained of headache, dizziness, irritability and soreness in the body "all over." His voice seemed low and lacking in vigor, and he was noted "not to be himself mentally." The bodily systems presented no important findings. He was committed to the state hospital a half year later where a diagnosis of dementia praecox was made, and has remained there since. In 1919 he was discharged from the navy with the same diagnosis. The examining board had convinced

itself that similar mental symptoms were present prior to his period of naval service. It was observed that this man had definitely paranoid ideas during his period of service prior to the injury.

Köppen [1] has described the after-effects of head injury. Bullard [2] reviewed seventy old cranial fracture cases, and found that thirty-seven of the patients did not complain of any symptoms. Eight patients presented only "slight" symptoms; eighteen had troublesome symptoms, but they were able to earn a livelihood; seven presented serious symptoms. Of fifteen patients operated on, twelve had no symptoms. Bailey [3] has written a treatise on nervous diseases following head trauma. Cannon [4] points out that the increase of intracranial pressure is due to edema of the injured tissues. Meyer [5] indicates the salient types of posttraumatic conditions; he reviews their pathogenesis and reports illustrative case histories. English [6] emphasizes the prevention of sequelae, and discusses prognosis. According to him, about 10 per cent. of the patients will show mental impairment, but rarely does definite insanity develop.

Cushing [7] has reported his physiologic investigations and also outlined the surgical technic to be followed. Demmer [8] emphasizes that the total impacting influences on the entire brain, rather than local edema, is the essential pathologic process. LeCount and Apfelbach [9] review postmortem observations in 504 cases, and note that cerebral edema was the commonest observation. Apfelbach [10] states that edema is most frequently noted postmortem in periods of from two hours to two or three days after the injury, and that the part played by edema in the production of symptoms is not exactly known. Wilensky [11] emphasizes that advancing intracranial pressure is the most important operative indication, and that the irritative or paralytic focal symptoms are second in importance. Lumbar puncture has given little more than temporary relief in most cases. Munro [12] refers to the indications for surgery in head trauma as the presence of a compound or comminuted fracture or increasing intracranial pressure. Blood in the spinal fluid has no bearing on operability. Murard [13] reports on forty cases observed for a year. Nineteen patients died; ten still complained of headaches and other symptoms. He notes that the motor symptoms are the slowest to disappear; also that the French government decided not to offer further military service to a person who had suffered head trauma.

Frazier and Ingham [14] describe a series of 200 cases observed during the first year following the trauma. They state that the functional symptoms, almost without exception, diminished gradually, and ultimate recovery, apparently complete, occurred in from three to nine months after the injury when gross damage to the brain was absent.

The large percentage of our patients giving these complaints would seem to indicate that the apparently complete recoveries emphasized by Frazier and Ingham did not persist in the majority of cases. In our group of this type, fifteen patients had actual brain tissue destruction, and of the seven patients from whom practically no functional complaints were elicited, four suffered brain injury.

Dana [15] thus refers to the startling similarity of these functional complaints: "It seemed to me, finally, that there must be an underground school for the education of those who have been hit on the head and desire permanent total disability compensation."

Chatelin and DeMartel,[16] who have observed a very large number of head injury cases at the Salpêtrière in Paris, report the same uniformity in functional complaints in cases with and without signs of objective trouble. These complaints, according to Dana, follow, in civil life, with litigation and compensation, and without either. He gives it as his opinion that, if the state refused all compensation after an injury, there probably would be 50 per cent. less who would continue to complain of this frequent head wound syndrome.

What percentage of head injuries was fatal during the war is, of course, not possible to state. However, the report of Hanson [17] is here in point. Out of a total of 449 classified cases of head injuries observed in a field hospital in 1918, 136 patients sustained scalp wounds only, and of these none died; 103 had skull fracture with intact dura, and seventeen patients had other wounds. In all of these there was a mortality of only 3.9 per cent., whereas eighty-nine cases of penetrating brain injuries, in all except three of which operation was performed, gave a mortality rate of 44.2 per cent. Of these deaths all were classified as operative excepting three. The total deaths were about 10 per cent up to Jan. 1, 1920, when his review was made.

TABLE 4.—*Permanent Organic Neurologic Findings*

	No. of Cases
1. Olfactory disturbance	1
2. Visual disturbances	4
3. Auditory disturbances	8
4. Pupillary abnormalities	9
5. Somatic motor phenomena	32
6. Somatic sensory phenomena	18
7. Aphasic disturbances	10

TABLE 5.—*Cases in Which there Was Primary Delirium Continuing Over Twenty-Four Hours and Permanent Invalidity*

Case	Days Unconscious	Type of Injury	Organic Neurologic Findings	Psychosis	Estimated Present Vocational Ability	Epilepsy
5	90	Brain	Present	Present	None	Yes
7	5	Brain	Present	Present	None	No
8	14	Skull fracture	Absent	Absent	33⅓% normal	No
9	12	Skull fracture	Absent	Absent	60% normal	Yes
10	14	Concussion	Present	Present	33⅓% normal	Yes
11	5	Skull fracture	Absent	Absent	None	No
12	24	Skull fracture	Present	Present	None	Yes
13	8	Brain	Absent	Absent	50% normal	No
14	12	Brain	Present	Present	(?)	Yes
15	10	Brain	Present	Absent	50% normal	Yes
16	4	Brain	Absent	Absent	75% normal	No
17	3	Skull fracture	Absent	Absent	50% normal	No
18	10	Brain	Present	Absent	None	No
19	8	Brain	Absent	Absent	75% normal	No

1. Köppen, M.: Arch. f. Psychiat. **33**: 568, 1900.
2. Bullard, W. N.: Boston M. & S. J. **136**: 404 (April 29) 1897.
3. Bailey, Pearce: Diseases of the Nervous System Resulting from Accident or Injury, New York, D. Appleton & Co.
4. Cannon, W. B.: Am. J. Physiol. **6**: 91.
5. Meyer, Adolf: Am. J. Insanity **60**: 373, 1904.
6. English, T. C.: Lancet **1**: 845 (Feb. 20) 1904.
7. Cushing, Harvey: New York M. J. **85**: 97-107, 161-169, 208-216 (Feb. 7) 1907.
8. Demmer, F.: Beitr. z. klin. Chir. **121**: 491, 1921.
9. LeCount, E. R., and Apfelbach, C. W.: Pathologic Anatomy of Traumatic Fractures of Cranial Bones, J. A. M. A. **75**: 501 (Feb. 21) 1920.
10. Apfelbach, C. W.: Studies in Traumatic Fractures of the Cranial Bones, Arch. Surg. **4**: 434-450 (March) 1922.
11. Wilensky, A. O.: S. Clinics N. America **1**: 1709 (Dec.) 1921.
12. Munro, D. H.: Boston M. & S. J. **186**: 342-350 (March 16) 1922.
13. Murard, J.: Lyon chir. **14**: 810 (Sept.-Oct.) 1917.
14. Frazier, C. H., and Ingham, S. D.: Arch. Neurol. & Psychiat. **3**: 17 (Jan.) 1920.
15. Dana, C. L.: Difficulties in the Diagnosis of Meningitis, Arch. Neurol. & Psychiat. **4**: 479 (Nov.) 1920.
16. Chatelin, C., and DeMartel, T.: Wounds of the Skull and the Brain, University of London Press, 1919.
17. Hanson, A. M.: Mil. Surgeon **47**: 662 (Dec.) 1920.

Sharpe [18] reports from 46 to 64 per cent. mortality based on the New York hospital records filed between 1900 and 1910. He attributes this high mortality to too frequent surgical intervention without due regard to shock, or to medullary or terminal edema. Of the patients who recovered, he could locate only 34 per cent., and, of these, 67 per cent. were still suffering from the usual head syndrome. He states that wet, swollen brain, thickening, and gradual induration about the supracortical veins in the cerebral sulci, resulting no doubt from organized blood, were the usual observations.

PATHOLOGY

The seemingly well defined functional syndrome, so called, suggests a fairly uniform causative mechanism. Meningeal adhesions, obstruction of the sinuses, particularly the longitudinal, and actual concussion of the brain and of the labyrinth are believed by various authors to figure in the pathogenesis of the chronic head syndrome. Chronic irritation of nerve cells can explain persistent symptoms of functional complaints.

Assuming the correctness of the assertion that 80 per cent. of the excretion of the spinal fluid is through the supracortical veins in the cerebral sulci, it is logical to deduce that there is local impairment of the cerebral circulation.

We should not lose sight of the fact that the 100 men are compensation cases. No doubt the desire for reimbursement and the difficult situations of the postbellum period have contributed to the degree of invalidity incurred. The psychopathologic elements frequently indicate a defense or escape reaction in these individuals. The uniformity in the group of functional complaints and the large percentages of objective permanent complications will lead us to look on the pathologic factors from a broad point of view. Vocational ability has been judged largely from the standpoint of the prewar occupation.

SUMMARY

1. One hundred old head injury cases were studied with special reference to the neurologic complications and the probable factors in their production, as well as to the degree of the vocational handicap.

2. The prognosis for life of the patients overcoming the immediate complications is very favorable, excepting those who incurred penetrating brain injury.

3. Freedom from invalidity is uncommon. Of the total group, 53 per cent. are unable to sustain themselves.

4. Careful, early treatment will do much to prevent chronic invalidity.

5. Increased intracranial pressure and signs of local irritation are the only indications for surgery on the head in the acute as well as in the chronic case.

6. Handling of the patients with intractable head injury syndrome constitutes a problem of great magnitude.

18. Sharpe, William: Diagnosis and Treatment of Brain Injuries With and Without a Fracture of the Skull, Philadelphia, J. B. Lippincott Company, 1920.

Public Health Directors at Large.—Each year, as more persons become interested in the work of the county public health association, they should be honored by election to membership as "directors at large." Their advice and aid would be at all times of great value to the officers. Success is entirely dependent on the active cooperation of the citizens of a county.—*Minn. Pub. Health A. J.* **4**:409 (March 11) 1920.

SUDDEN ACUTE PAIN IN THE SHOULDERS ASSOCIATED WITH ACUTE PELVIC PAIN IN WOMEN

A SYMPTOM OF RUPTURED ECTOPIC PREGNANCY, INDICATING SUBPHRENIC BLOOD EXTRAVASATION (SUBPHRENIC HEMOPERITONEUM) *

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Pain in the shoulders is associated, as a rule, with disorders of the shoulder joint and in the proximity; and with various intrathoracic and subdiaphragmatic lesions, such as angina pectoris, pleurisy, pneumonia, new growths and lesions of the gallbladder, liver, stomach and intestine.

While I was engaged in studying the significance of shoulder pains in uterine insufflation, my attention was called to the occurrence of shoulder pains in patients with ruptured ectopic pregnancy.

The first observation was made on a ward patient in October, 1921. The patient presented the history characteristic of tubal pregnancy. There was a fulness in the pouch of Douglas, tenderness, moderate abdominal distention, and shifting dulness in the flanks. The patient stated that she had severe darting pains in the shoulders, which had begun two days before her admission to the hospital. On further questioning, this pain was said to follow an attack of fainting. She had not suffered from "rheumatic" pains before, and was at a loss to account for these pains.

At the laparotomy there was a large amount of free blood in the general peritoneal cavity, and clotted blood in the pelvis. The tubal rupture was found on the left side. From both lateral abdominal regions there poured down a large amount of fluid blood so that it was impossible to wipe the abdominal cavity dry. While the pelvis was successfully wiped clean, suction being used, the blood continued to gravitate down from above. The following morning the patient was completely relieved of her shoulder pains.

This symptom was so marked before the operation that it gave rise to some discussion as to its mechanism. Some ventured the explanation that it was due to reflex radiation from the seat of the tubal rupture. But as the spinal nerve trunks by which the sensation of pain in the shoulders is conveyed are far removed from the sacral autonomic fibers, it would be essential to trace the pain stimuli produced in the pelvis through intermediary nerve paths which should connect the cervical with the lumbosacral cord. Such associating fibers, however, so far as I have been able to ascertain, have never been identified. A more direct explanation is to be found in the observation, repeatedly made, of instances of subphrenic pneumoperitoneum when artificially induced, by way of the uterus and tubes, for the purpose of determining tubal patency. Shoulder pains have been found uniformly with artificial subphrenic pneumoperitoneum, so that they have come to be regarded as pathognomonic of that condition.

The mechanism by which these shoulder pains in subphrenic pneumoperitoneum are produced depends on the relations between the diaphragm and the suspensory ligament of the liver. When gas displaces the diaphragm upward, the liver is simultaneously displaced downward. The falciform hepatic ligament is

* From the gynecologic service of Mount Sinai Hospital, Dr. Joseph Brettauer, chief of service.

consequently stretched, and thus the phrenic nerve is stimulated. As the phrenic nerve has its origin in the third, fourth and fifth cervical cord segments, and as it actually connects with cervical peripheral nerves supplying the shoulder girdle, pain produced in the diaphragmatic area is referred to the shoulders by sensitized cutaneous nerves of the cervical segments.

Capps and Coleman have recently demonstrated [1] that localization of pain from stimulation of the diaphragmatic peritoneum is never in the diaphragm itself: "It is always referred to some distant part. Stimulation of the outer margin causes diffuse pain over the lower costal region and subcostal abdominal wall. Stimulation of the central portion produces pain over a sharply limited point somewhere along the trapezius ridge." It may be added that in patients with an artificial subphrenic pneumoperitoneum the same phenomena have been observed. The extent, distribution and intensity of the shoulder, interscapular and subcostal pain depend on the quantity of gas that reaches the subphrenic space and on its diffusion over the liver.

If gas under the diaphragm can cause shoulder pains by distention and stretching, it may also be assumed that fluid suddenly accumulated in the subphrenic space may also produce these referred pains. It should therefore not be surprising to encounter shoulder pains in cases of ruptured ectopic pregnancy, when large quantities of fluid blood are extravasated in the peritoneal cavity, extending upward along the lumbar gutters as high as the subphrenic spaces. Just as with gas in subphrenic pneumoperitoneum, the fluid also may be confined to one side or the other; it may be unevenly distributed, giving rise to unilateral or bilateral shoulder pains, their intensity varying with the amount of distention. The one point of difference in the behavior between gas and fluid within the free peritoneal cavity is that gas expands in all directions, and may travel upward to either side, regardless of its source. Thus, for example, if the gas passes into the abdominal cavity through a patent right tube, it does not necessarily follow that a right sided subphrenic pneumoperitoneum will result. Fluid blood, on the other hand, tends to course along the lumbar gutter on the side of the tube from which it issues, so that unless the hemorrhage is very large, the shoulder pain will correspond to the side of the tubal rupture. When the hemoperitoneum is extensive, bilateral shoulder pains are present, but affect more intensely the shoulder corresponding to the side of the tubal rupture. When the hemorrhage is not extensive and is confined to one side, the shoulder pain will indicate the side of the rupture.

ILLUSTRATIVE CASES

CASE 1.—*Bilateral shoulder pains, more intense in the left shoulder. Findings: Ruptured left sided tubal pregnancy, with large amount of extravasated blood.*

H. G., aged 35, single, was admitted to the gynecologic service of Mount Sinai Hospital, Dec. 7, 1921, as an emergency case. Menstruation began at 15 years, was always regular, and was of four days' duration. The flow was usually scanty, and was accompanied by severe cramps on the first day. The last menstrual period was a normal one, and had occurred three weeks before admission to the hospital. The patient was well for a week and then began to bleed moderately without pain until two days before examination, when the flow became scanty.

On the morning of the day of her admission, the patient fainted on walking to the bathroom, got up unaided, and went to her room. Bleeding was still scanty, although a definite decidual cast was discharged. After that she complained of severe pains in both sides of the abdomen, "radiating" to the shoulder, and worse on the left side. These pains had continued in spasmodic attacks. A decidual polyp extruded from the cervix, which was otherwise of normal appearance. The uterus was soft and appreciably enlarged. There was a very tender elastic mass in the left fornix, and bogginess in the culdesac as well as in the right fornix. The diagnosis of ruptured ectopic gestation of the left tube was made. The hemoglobin was 55 per cent.

At the laporotomy, which was done the same day, I found a left tubal gestation of the dissecting type, which had ruptured. The peritoneal cavity was filled with free and clotted blood, which came down from both lumbar gutters, more abundantly from the left side. The right tube was infantile, and the ovary was normal.

CASE 2.—*Severe pain in the right shoulder. Findings: Right sided tubal abortion and moderate blood extravasation.*

P. M., aged 28, married, the mother of three children, the youngest being 8 months old, had always had regular menstrual periods of six days' duration and painless. The last regular period began, Jan. 25, 1923. January 26, the patient was seized with violent pain in the right lower abdominal quadrant. Shortly afterward she was seized with severe pains in the right shoulder, requiring counterirritants. Faintness preceded the spasmodic pain attack, which lasted about two days. The period changed in character from the normal moderate flow to staining, which had continued until February 14, when she was taken with severe pains in the right side, which were very severe in the right shoulder. Syncope preceded this attack. Bleeding had slightly increased during the last two days, the pains persisting both in the right shoulder and in the abdomen. The uterus was in the anterior position, slightly enlarged, and there was slight bleeding from the external os. A smooth, elastic, tender mass was present to the right of the uterus, and there was bogginess in the pouch of Douglas. The left adnexa were not palpable. At the laparotomy, February 16, a tubal abortion involving the right tube was found. The omentum and intestine were covered with small blood clots. A moderate amount of free blood was in the pelvis, larger blood clots being adherent to the right tubal fimbria. Blood and fibrin covered the right tube and ovary.

Of all the cases of ectopic pregnancy observed since October, 1921, shoulder pains have been encountered in four; these were complicated by large extravasation of free blood. In one, most of the blood accumulated in the lumbar gutters and in the subphrenic spaces. This was in all probability due to the fact that the bleeding was brisk and followed the initial syncope, rendering the patient prostrate until she was relieved by the operation. When bleeding is gradual and not associated with collapse, the patient may walk about for a while, thus allowing the blood to gravitate down in the deep pelvis. It is possible also that the common practice of elevating the lower extremities as a first aid measure to relieve syncope may cause the first gush of blood to reach the subphrenic spaces, where it remains more or less confined, until liberated by laparotomy.

In the unruptured cases and in those complicated only by pelvic hematocele with or without syncope, shoulder pains were absent. While pelvic pain is perhaps one of the most constant symptoms of ruptured ectopic pregnancy, the presence of shoulder pains and, to a less degree, subcostal pains makes the differential diagnosis from other pelvic lesions more complete. Together with other signs and symptoms of ectopic pregnancy, the sign of referred pains in the shoulders may help in the differentiation from rupture of other hollow abdominal viscera, such as perforated gastric or duodenal ulcer, appendix or intestine (typhoid).

1. Pleural and Peritoneal Pains, editorial, J. A. M. A. **80**: 403 (Feb. 10) 1923.

From twisted ovarian cysts or torsion of tubes, from acute inflammatory pelvic lesions, the differential diagnosis should, in the presence of shoulder pains, render the diagnosis practically certain in favor of ruptured ectopic pregnancy.

261 Central Park West.

GONOCOCCAL INFECTION OF KIDNEY WITH SPONTANEOUS RECOVERY

REPORT OF CASE

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While mixed renal infection in the course of gonorrhea is not infrequent, a pure gonococcal invasion of the kidneys may be considered a rare complication. The leading textbooks on urology devote only a few lines to this condition, and some textbooks fail to mention it at all. Exhaustive search of the literature reveals but twenty cases in which the gonococcus was the sole cause of the trouble. Hagner, in 1910, compiled ten cases that were purely gonococcal in origin, and ten others attributed to mixed infections. Since then, various authors have reported seventeen cases, ten of which represented a pure gonococcal infection.

Of the twenty cases of pure gonococcal infection, sixteen occurred in men, and four in women. The right kidney was involved in nine cases, the left in five, and both kidneys in four. In two cases, we could not ascertain which kidney was involved. Cultures were made in eleven cases, the nine other cases being proved by stained smears. Three cases were discovered at necropsy, and one at operation (nephrotomy). In four cases, surgical interference was indicated (two nephrectomies and two nephrotomies); eight cases were cured by pelvic lavages. Two cases were treated with serum and vaccines; there was spontaneous recovery in one case. The outcome in one case could not be determined.

Few writers were able to find any characteristic vesical lesions, absence of any marked changes in the bladder mucosa being the rule. In the majority of the cases, there was a distinct history of chronicity. This was absent in our case.

REPORT OF CASE

Gonorrheal infection of the left kidney, hydronephrosis and gonorrheal ureteritis with a stricture. History.—J. M., a man, aged 28, single, in February, 1922, contracted a gonorrheal urethritis, which subsided under routine local treatment in the course of two or three weeks. One month following the onset of the urethral discharge, he began to complain of weakness, general malaise, loss of appetite, fever and rapid loss of flesh. He had no pain or frequency on urination at any time, but what brought him under our observation was an acute, agonizing, colicky pain in the left hypochondrium, radiating backward and lasting a few hours, and hematuria.

Examination (April 2).—The patient was emaciated, and apparently acutely ill, with the tongue heavily coated; the temperature was 102.2 F.; the pulse, 110. The chest was normal. Examination of the abdomen revealed an enlarged left kidney, the lower pole of which was distinctly palpable in the left lower region at the level of the umbilicus. The prostate gland was not enlarged, and the expressed secretion contained no pus and no gonococci. There was no evidence of urethral discharge at the meatus. The catheterized bladder urine was very turbid, and contained a heavy trace of albumin and pus. Smears showed innumerable intracellular gram-negative diplococci, having all the morphologic characteristics of gonococci. No tubercle bacilli were found after an exhaustive search. The roentgenologic examination of the urogenital tract revealed no shadows suggestive of urinary calculi. Blood count revealed: 9,400 white cells, with 71 per cent. polymorphonuclear leukocytes, and 3,400,000 red cells. The hemoglobin was 60 per cent.

Cystoscopy.—This was performed, April 7. The bladder mucosa was moderately injected, but presented no other unusual characteristics. The right ureteral orifice was normal in appearance. The left ureteral orifice was inflamed and somewhat edematous. A No. 6 F. catheter of the whistle tip variety entered the right renal pelvis with great ease. The urine obtained from the right kidney was clear, and on microscopic examination showed no pus and no organisms. Numerous attempts to pass olive tip catheters of various sizes into the left ureter failed, an obstruction being invariably encountered at 6 cm. Even a filiform bougie could not surmount the obstruction. After considerable manipulation, a gush of about 10 c.c. of pale, shreddy urine was obtained in a continuous stream through a No. 4 F. olive tip catheter. On microscopic examination, the urine was found to be thickly studded with innumerable pus cells. The stained specimen looked like a smear obtained from a urethral discharge, containing numerous gram-negative intracellular diplococci having all the morphologic characteristics of gonococci. Unfortunately, as in the cases of other writers, the rarity of the condition was not realized, and for this reason no cultures were made. Phenolsulphonephthalein injected intravenously appeared at the end of three minutes in the urine obtained from the right kidney. Concentration was good. The urine from the left kidney was collected about twenty minutes after the injection of the dye, and practically no trace of the latter could be detected in it.

Following cystoscopy, the patient was admitted to the People's Hospital, where we kept him under observation. His condition gradually improved, but the enlargement of the kidney and pyuria persisted. Another cystoscopy for the purpose of lavaging the pelvis of the diseased kidney and obtaining urine for culture was refused.

COMMENT

It was evident that we were dealing with an acute gonococcus infection of the kidney, pyelitis or pyelonephritis, associated with hydronephrosis, the latter being subsequent to ureteritis and a stricture, as evidenced by the inability of the smallest olive tip catheter and filiform bougie to overcome the obstruction, and by the obtaining of the urine in a continuous stream. The severe renal colic of which the patient complained was undoubtedly due to the distention of the hydronephrotic sac with fluid. The improvement noted after cystoscopy was probably due to the reestablishment of urinary drainage from the left kidney. The patient was in the hospital two weeks, and there was a gradual improvement in the general and local kidney condition. He was seen again five months later. He had gained 20 pounds (9 kg.) in weight and had been working for the last two months. On examination, the kidney was no longer palpable, and the urine was sparkingly clear and free from gonococci.

307 East Seventeenth Street—221 Second Avenue.

More Mind to Save Civilization.—If we are courageously to meet and successfully to overcome the dangers with which our civilization is threatened, it is clear that we need more mind than ever before. It is also clear that we can have indefinitely more mind than we already have if we but honestly desire it and avail ourselves of resources already at hand. Mind is our "conscious knowledge and intelligence, what we know and our attitude toward it, our disposition to increase our information, classify it, criticize it, and apply it."—Robinson: The Mind in the Making.

OTIOBIOSIS, THE EAR TICK DISEASE

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According to Toomey,[1] "the tick that invades the ears of cattle and man, the 'spinose ear tick,' is an ectoparasite belonging to the family *Argasidae*. It is no longer considered a species of the genus *Ornithodoros*, as it was made the type species of a new genus by Banks, 1908. Its proper technical name is now *Otiobius megnini* (Duges, 1883), Banks, 1908."

Among the first to become acquainted with tick infestations of the ear were the natives and early colonists of Mexico. The ear ticks were not, however, considered as members of a distinct species, but were described together with the other ticks found on man as members of *Ixodes hominis* by Koch in 1844. In the manuscript reports of French surgeons and veterinarians who accompanied the invading French army to Mexico in 1864, we find particular mention of the ear tick. "The horses of the expedition were frequently infested, and not a few cases occurred among the soldiers." Toomey gives, as the date of the first printed record of the tick infesting man, the year 1867, in a report by Guérin; but it was not until 1883 that Alfred Duges recognized it as a separate species. Duges gave it the name of *Argas megnini*, in honor of his former teacher, Prof. Pierre Mégnin of Paris. Two years later, Mégnin published a new description with illustrations based on specimens sent him from Mexico by Duges. Hooker[2] first described its life history in 1908. Since then, the spinose ear tick has been mentioned and described more or less thoroughly in various of the United States government bulletins, and in 1918, Imes[3] published an eight-page bulletin dealing exclusively with the spinose ear tick, and methods of treating infested animals. In 1921, Toomey of St. Louis published an article entitled "Otiobiosis (Ear Tick Disease)" discussing the subject particularly from the standpoint of the human infestation.

The tick *Otiobius megnini* is found throughout Mexico and those states of the union along the Mexican border. It has been reported from Idaho, Nebraska, Kansas, Iowa, Kentucky, Colorado, Montana, Nevada, California and Oregon. It is very possible that the same species is found in South America, and Bedford has shown that it occurs at Vryburg and Fauresmith in the Transvaal, on the stock. It was first reported in South Africa in 1912.

Toomey tells us that there seems to be no well-marked seasonal prevalence, but the tick is found more frequently in dry hot seasons; according to Imes, moisture is apparently detrimental to the tick during certain stages of its life cycle.

DESCRIPTION OF THE PARASITE

According to all authorities, this tick is remarkable for the difference in appearance between the spiny nymphal form and the adult. Toomey's description of the tick is remarkably clear, and particularly adapted to the medical man without technical training in entomology:

The larva is an elongate ovopyriform hexapod, with a long terminal capitulum; it measures 0.6 mm. from tip of hypostome to posterior extremity, but gorged larvae attain to 4 mm. by 2 mm., and are then nearly oval. The integument is finely striated with symmetrically arranged pits, from which bristle-like hairs issue. The unengorged larva is white, the gorged larva is violet brown.

The nymphal stage is covered with spines; hence the popular name. The body is lozenge-shaped, slightly longer than broad, rounded anterior to third legs, suddenly contracted posterior to them; 3 to 4 mm. long when unfed; gorged stage measures 5.5 by 8.5 mm. Color, unfed, earthy yellow; replete, violet brown. Integument, both ventrally and dorsally, is beset with posteriorly directed spines or bristly hairs; ventrally the spines extend to the anus. Integument finely striated, pits absent.

The adult body is panduriform, being broadest at level of third legs, and suddenly contracted behind fourth pair. Eyes absent. Integument with small circular, shallow pits with short central hairs, the whole surface being finely granular. On the ventral surface, between the two postanal grooves, extremely small and crowded spines. Legs comparatively thinner and shorter than in nymph. Color brownish violet or black. Size: female 5 to 7 mm. long by 3.5 to 4.5 mm. wide, males somewhat smaller.

The eggs are large and dark brown.

LIFE HISTORY OF THE PARASITE

Hooker divides the ticks into three classes according to their habits of molting, as suggested by Ransom: (1) those which pass both molts on the host (*Margaropus and Dermacentor*); (2) those which pass the first molt on the host, but the second molt off the host (*Ornithodoros megnini* and two African species, *Rhipicephalus bursa* and *evertsi*); (3) those which pass both molts off the host (most of the ticks in this country). Thus, as Toomey says, except for *Rhipicephalus bursa* and *evertsi*, the life history of *Otiobius megnini* is unique among the ticks in that only one molt, from larva to nymph, takes place on the host, and the nymph stores up enough food to make it unnecessary for the adult to feed before fertilization and oviposition take place. The life history, as described by Hooker and Imes is about as follows.

1. The first, or larval, stage is the most active stage. It is in this stage that the tick enters the ear. The tiny six-legged animal is not easily visible with the naked eye. Having gained entrance to the ear, the parasite penetrates deep down the canal and buries itself between the folds of skin; it has even been known to attach itself to Shrapnell's membrane in man.

2. The parasites gorge themselves with blood from five to twelve days, having increased several times their original size, attaining a length of 4 mm. and a width of 2 mm. The engorged larvae are inactive, and grublike in appearance, of a yellowish-white or pink.

3. The engorged larva sheds its skin and appears as an eight-legged nymph, covered with small spines. Unengorged, the nymphs are from 3 to 4 mm. long.

4. The nymphs attach themselves to the skin inside the ear and suck blood from the host, slowly increasing in size. The nymphs feed for several weeks and sometimes for months (from fifty-one to more than 200 days), and have been known to remain in the ear for seven months, according to Imes. They change their position in the ear frequently. When fully grown and completely gorged, their length ranges from 5.5 to 8.5 mm. On the completion of their development as parasites, they drop out of the ears and crawl up several feet from the ground, secreting themselves in dry, protected places, such as cracks and crevices of buildings, fences, corral walls and trees. Hooker believes that the fertilized females are negatively geotropic, for he has noticed that they crawled up posts and shrubs and

1. Toomey, T. N.: Laryngoscope **31**: 930 (Dec.) 1921.
2. Hooker: J. Econ. Entom. **1**: 34-51, 1908.
3. Imes: Farmer's Bull. 980, U. S. Dept. Agric., 1918, pp. 3-8.

deposited their eggs on such objects at about the level of the ox's head when in the act of grazing. This tropism he correlates with the parasitic activities of the larvae, and considers it a mechanism acquired, favoring access to the ears of cattle.

6. In about a week's time, in midsummer or early autumn, after the nymph leaves the ear, the second molt takes place, the membranous skin is shed and the adult tick appears, without spines. Fertilization then takes place and oviposition commences. So far as known, the adult never attaches itself to animals, nor does it take food. J. D. Mitchell has kept the nymphs alive in a pill-box, without food, for one and a half years. It is evident that the nymph is capable of storing up a great deal of food. While Toomey remarks that the eggs are often laid on the ground, Imes states that the eggs are laid in cracks and crevices of buildings and fences. According to Imes, "the egg-laying period may be intermittent and continue over a period as long as six months." But as soon as the egg-laying is completed, the females die. Unfertilized females have been known to live more than a year. Mégnin has kept them alive for two years without feeding. Many authorities believe that the adults never feed, and this view is supported by the fact that the adult capitulum is very small and the hypostome unarmed.

7. The eggs, large and dark brown, may hatch as early as ten days after they are laid; but, if the climate is temperate, two or three weeks is required. Shortly after hatching, the seed-ticks are ready to attach themselves to any suitable animal. But they may live for three months without feeding. "The primitive hosts are the wild mammals of the tropical and subtropical prairies, particularly the hares and gophers . . . . Horses, asses, dogs, coyotes and man are less frequently infested."

SYMPTOMS IN MAN

"Besides the common feeling of fulness, the other sensations are described as a tickling and ringing rather than the frank scratching felt after a beetle has crawled down the canal. Throbbing may occur, but is not so frequent as in invasions of the canal by larvae of other insects. Dizziness and nausea are not so common as in myiasis. Excruciating pain may occur at times." Little bleeding occurs. It seems likely that the tick secretes an exotoxin that has a slight keratolytic effect, according to Toomey. "Damage to the skin of the canal is slight when infestation has lasted for only four or five weeks. . . . Most cases of longer duration are, however, complicated by secondary mycotic invasions—more frequently by the saprophytic molds than by the penetrating fungi. . . . In time, a chronic eczematoid dermatitis may result. Furunculosis or cellulitis are not common complications." It has been noted that the presence of the tick causes the secretion of surprisingly little cerumen, as compared with insect infestations of the ear. But an increased amount is almost invariably noted. Simpson and Wheler[4] reported that in one ear of a patient who had a tick in each ear, the canal was almost entirely occluded by cerumen. They also found one of the ticks spread over the tympanic membrane. Toomey remarks that "the unexperienced may mistake the six-legged larvae for a beetle. The beetles usually found in the human ear canal may in a popular way be described as six-legged, relatively very much narrower than the larval ear tick; with longer, more jointed legs, free from hairs; their mouth parts are much smaller, and the body surface is apt to be more convex and more shiny."

4. Simpson and Wheler: Lancet **1**: 1197-1198, 1901.

PREVIOUS REPORTS OF CASES

1. The first instance of infestation of man, to appear in print, was recorded by Guérin in 1867.

2. Duges, in his description of the parasite in 1883, said: "This epizoon, very abundant in the state of Guanajuato, is found on the horse, the ass and the ox, principally in the ears, and is spread frequently to other animals, in particular to man, for I have often removed it from the ear passage of children and even adults."

3. Townsend,[5] in 1893, noted that Dr. W. M. B. Lyons of Las Cruces informed him that he had on several occasions extracted this tick from the ears of children in the neighborhood. He recommended a little chloroform or phenol (carbolic acid) in sweet oil.

4. Rev. W. J. Holland[6] tells of a friend who got a tick in his ear while sleeping on the ground in Arizona. This caused extreme pain, prohibiting sleeping and finally causing loss of hearing. A physician, on examination, called it a case of polypus. In his efforts to remove this, he removed the tick. The hearing was restored at once, but the irritation remained for some time. The patient had since heard of two other cases of the same kind, which were relieved by tobacco juice. Holland said the species was *Ixodes bovis*. I wonder whether it was not the spinose ear tick.

5. Dr. Fernando L. Arguelles of El Paso, Texas, showed Toomey five ear ticks that he had removed from three Mexicans. Two of the patients had two ticks each. One of the patients had eczema as a sequel.

6. Two specimens in the nymphal state were taken from the ears of a visitor to Cambridge by Dr. J. Christian Simpson. They were supposed to have entered the ears when the patient was camping out in Arizona. There was one tick in each ear. One of the ticks was spread out over the tympanic membrane, and the canal was almost entirely occluded by cerumen.

7. Mr. J. D. Mitchell of the Bureau of Entomology reports two cases at Victoria, Texas, in 1905, in which specimens were taken from human ears by a physician, following prolonged, severe pain.

8. Herms[7] records the case of a man whose ear was entered by a tick while sleeping on the ground in the vicinity of cattle during the month of September. The tick lived in the ear until December 9, causing much inconvenience. It was finally removed by peroxid applied with a syringe.

9. Prof. Myron H. Swenk of the Department of Entomology and state entomologist of Nebraska lent me a specimen and a letter received in connection with a hitherto unreported case of otiobiosis. The patient was a 3 year old boy living at Lodgepole, Neb. The tick, an unreplete nymph of *Otiobius megnini*, was removed after three months' infestation, by sweet oil and water. There was but little pain, and that only at intervals. Preserved in alcohol, the tick appeared dark brown, with a prominent hypostome and constricted at the sides behind the third pair of legs. It was 4 mm. long by 3 mm. wide.

10. While serving as a medical officer with the National Guard of Pennsylvania, while the latter was stationed at Camp Stewart, near El Paso, Texas, during 1916, Dr. Noxon Toomey removed an ear tick from one of the men. Though the cerumen was syringed away, the tick could not be dislodged. After the canal was cleared, he introduced a probe tipped with cotton, soaked in chloroform. After three minutes had elapsed, he was able to remove the tick. It proved to be a young nymph of *Otiobius megnini*. It had been in the ear six or seven weeks, and had produced no other disturbance except a slight itching deep in the canal.

AUTHOR'S CASE

In 1922, a 7 year old boy, who had recently come with his parents from Arizona, was brought to me for examination. The mother noticed what she thought to be a blood blister in the boy's ear while washing it. The boy had not complained

5. Townsend, C. H. T.: New York J. Entom. Soc. **2**: 49-52, 1893.
6. Holland, W. J.: Canadian Entomologist, 1898.
7. Herms: Medical and Veterinary Entomology, 1915, pp. 328-329.

of any trouble with his ear. On closer examination, I found what might have been taken for a polypus, but which proved to be a tick of the species *Otiobius megnini*, attached to the membrana flaccida. After removal it proved to be quite active, moving about on the table. A small bleeding point was noticed where it was attached to Shrapnell's membrane. No further trouble was experienced by the patient. The tick was bluish gray, and covered with coarse hairs or spines, a replete nymph. After immersion in alcohol, it became dark brown. It was 7 mm. long by 4.5 mm. wide.

TREATMENT IN MAN

The tick should be narcotized with chloroform vapor introduced into the canal on a cotton-wound probe, after

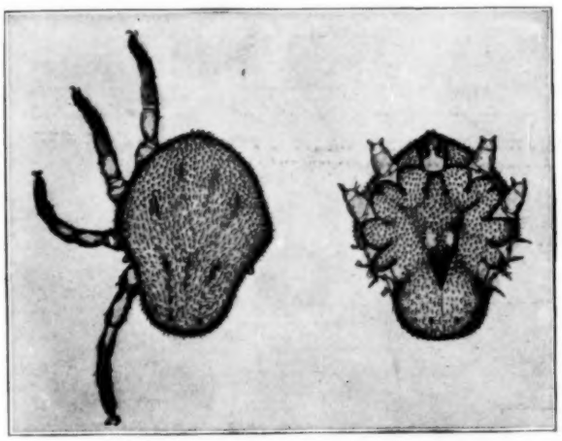

Fig. 1.—Otiobius megnini, unfed nymph, dorsal and ventral aspects (from Marx).

which syringing the canal will easily remove the parasite. Should there be no chloroform or ether at hand, an instillation of liquid petrolatum or any bland oil will close the breathing pores of the tick and cause it to release its hold. It can then be removed with aural forceps or by syringing. Toomey recommends an ointment containing salicylic acid and benzoic acid, 3 per cent. each, in any neutral base, as the best treatment for any complicating eczematoid dermatitis, mycotic in origin.

PROPHYLAXIS

Toomey reminds us that the wild mammals of the subtropical prairies furnish an ineradicable reservoir of ear tick infestation. "Infestations of cattle can be prevented," he says, "by instillations of pine tar-cottonseed oil mixture into the ears once a month." He is of the opinion that man is most frequently infested during the tropical sandstorms. Persons who are exposed to horses or cattle should have the ears examined by a physician every three or four months.

Fig. 2. — Engorged nymph (Hunter and Bishopp).

Because of its peculiar life history and the remarkable difference in appearance between the spiny nymphal form and the adult, *Otiobius megnini* interests the zoologists; but the physician is interested in the prevention of otiobiosis, or its efficacious treatment, should the disease occur. Pierce [8] calls attention to another factor that will probably add to the interest in the spinose ear tick:

> We should be familiar with this tick since a considerable part of our military activities in this country have been and will probably continue to be in the Southwest, where the species abounds. It is probable that by exercising some care in locating camps and in choosing places for sleeping, some degree of immunity from attack will result. The seed ticks are, of course, concentrated about feed lots, corrals and watering places of live stock, and these should be avoided in choosing a camp site.

1503 South Twenty-Second Street.

8. Pierce: Sanitary Entomology, Boston, Richard G. Badger, 1921, pp. 424-426, 433-434, 444-445.

SUBDIAPHRAGMATIC ABSCESS *

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Subdiaphragmatic abscess, or a localized collection of pus in contact with the under surface of the diaphragm, is becoming less frequent, as diagnosis and surgical technic improve; but the condition, I believe, is more common than discussions of the subject usually imply. It certainly occurs occasionally in almost every hospital; and since early diagnosis and treatment usually mean a cure, while late diagnosis is often followed by serious complications and death, subdiaphragmatic abscess should be carefully eliminated in every postoperative case showing evidence of suppuration somewhere in the body, or in the case of any acute abdominal catastrophe followed by evidence of suppuration.

The subphrenic space is divided anatomically into four intraperitoneal and two extraperitoneal spaces. The falciform ligament divides the entire space into a right and left side, these being further divided into anterior and posterior intraperitoneal spaces by the lateral ligaments. The left extraperitoneal space is just above the pole of the kidney, where the peritoneum reflects on to the diagphragm; the right lies between the layers of the coronary ligament.

Piquand [1] classifies these abscesses into: (1) anterior inferior abscesses, mainly with abdominal signs; (2) retroperitoneal abscesses, with signs of lumbar swelling, and (3) superior abscesses with thoracic symptoms.

Gravitation, the suction action of respiration, and the lymphatic connection between the lower and upper portions of the abdomen, are the usual explanation of the occurrence of subphrenic abscess. In infections in the lower part of the abdomen, the subphrenic spaces may be involved in several ways: (1) by direct extension up the lumbar fossae; (2) through the lymphatics; (3) through the portal circulation, or (4) associated with or following a general peritonitis. According to Ullman and Levy,[2] infection by the peritoneal route produces intraperitoneal abscess; by the cellular tissues and blood stream, extraperitoneal abscess; and by the lymphatic route, both types.

The commonest sources of subphrenic infection are the appendix, ruptured gastric and duodenal ulcer, and gallbladder and liver infections, although an abscess may follow infection of any abdominal organ or may be secondary to a focus elsewhere in the body. Lock-

* Read before the Fifty-Third Annual Session of the Medical Society of Virginia, Norfolk, Va., Oct. 31-Nov. 3, 1922.

1. Piquand, G.: Les abcès sous-phréniques, Rev. d. chir. **39**: 156-179, 373-393, 812-831, 962-982, 1909.

2. Ullman, Alfred, and Levy, Charles S.: Subphrenic Abscess, Surg. Gynec. & Obst. **31**: 594-600 (Dec.) 1920.

wood [3] states that in a hundred cases at the Mayo Clinic twenty-two originated primarily from the stomach and duodenum, twenty-two from the appendix, and thirty-five from the liver and gallbladder. He estimates, in an analysis of cases occurring in several large clinics, that from 0.6 to 1 per cent. of all cases of appendicitis are followed by subdiaphragmatic abscess.

In the diagnosis of subdiaphragmatic abscess, a history of recent injury, operation, or infection elsewhere in the abdomen is very important. There may be pain and tenderness over the infected area, hiccup or nausea, a slight cough, painful respiration, or a feeling of distention on the affected side. In the acute cases the temperature, pulse and blood picture are those of marked suppuration; the respiratory rate is not usually increased in proportion to the pulse and temperature. When the condition becomes chronic, the general symptoms are not so marked and the leukocytosis not so great. The physical findings are usually those of pulmonary compression and elevated diaphragm. The heart may be displaced, but not so much as in pleural effusion; and the liver may be displaced downward. A pleural friction rub is frequently present. When there is gas in the abscess, an area of tympany may be found. There may be a bulging in the upper abdomen anteriorly, laterally or posteriorly.

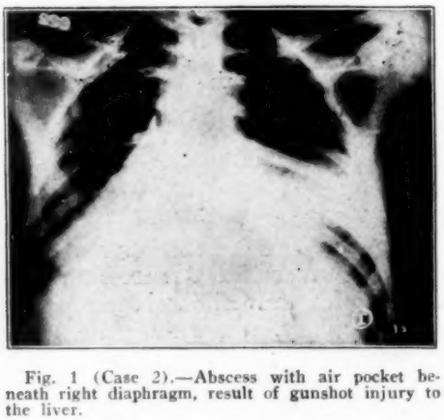

Fig. 1 (Case 2).—Abscess with air pocket beneath right diaphragm, result of gunshot injury to the liver.

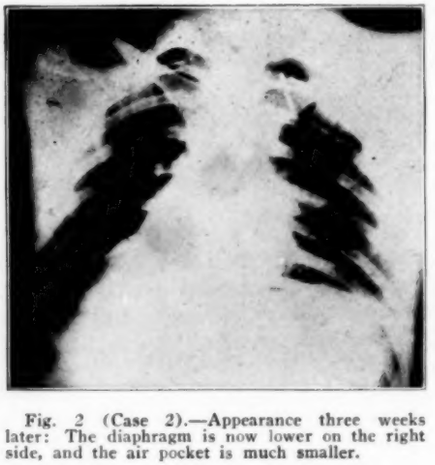

Fig. 2 (Case 2).—Appearance three weeks later: The diaphragm is now lower on the right side, and the air pocket is much smaller.

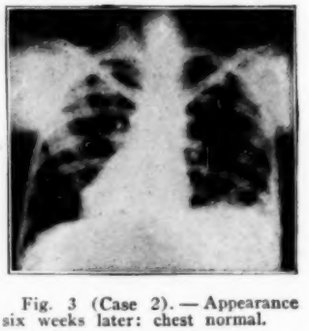

Fig. 3 (Case 2). — Appearance six weeks later: chest normal.

Bulging posteriorly in the lumbar region, with local pain and tenderness, usually means extraperitoneal abscess.

Burke [4] describes an irregular line of the upper border of the liver dulness, the highest point being in the median or anterior axillary line. He found Litten's sign in only one of eighteen cases, though this sign is said to persist in subdiaphragmatic abscess.

Some [2] state that, except in the gaseous type, it is impossible to distinguish between the impairment in the lower chest due to pleurisy and that due to subdiaphragmatic abscess.

When there is gas present within the abscess, three different zones of resonance may be made out. In the lower area there is dulness, due to the fluid within the abscess and the liver dulness; in the middle area there is tympany, due to the gas within the abscess, and in the upper area there is the normal lung resonance.

Hoover noted, in a case of subphrenic abscess, that the costal border had a greater lateral excursion on the affected than on the sound side, owing to the loss of the normal antagonism of the diaphragm to the action of the scaleni and intercostals of the affected side. In one of our cases of left side abscess this was true, but in the others it was negative.

Lee [5] reports four cases of subdiaphragmatic inflammation, with physical signs and roentgen-ray appearance of abscess, but with spontaneous recovery without suppuration. The diaphragm was elevated just as in abscess. In one of his cases a few cubic centimeters of cloudy fluid was removed from the pleural cavity on the affected side. These were evidently instances of subdiaphragmatic inflammation in which recovery took place before suppuration occurred, and must be borne in mind in the interpretation of a high diaphragm.

In our series of nine cases, seven were on the right side, and two on the left; three followed appendectomy; one, a gunshot wound; one, perinephritic abscess; one, resection of the cecum for carcinoma; one, perforated duodenal ulcer; one, perforated gastric ulcer, and one, multiple liver abscesses. Of this group, four patients are well; one is still under observation, and four are dead.

In two of the four deaths, the importance of an early diagnosis was exemplified. The patients were weak and emaciated, the abscess having been present for more than six months. In one fatal case there were multiple abscesses of the liver in addition to a chronic abscess. The liver abscesses were probably primary. The fourth case was acute, and the patient probably should have recovered, except for the fact that a large empyema developed following transpleural drainage. In one of the cases ending in recovery we felt reasonably sure that the pleura was infected by an exploring needle. The day the needle was used, no fluid could be found in the pleural space by either physical examination or the roentgen ray. Thirty-six hours later, symptoms of pleurisy developed. This was followed by a fairly large empyema.

In only one case was a definite diagnosis made prior to the roentgen-ray examination. The evidence furnished by the roentgen ray is almost entirely due to changes in the position and contour of the diaphragm, except when, in addition to change of contour, there is an air pocket or collection of gas beneath the diaphragm. The diaphragm is almost always elevated, usually less so in the extraperitoneal cases; the dome is accentuated, and the excursion limited. Occasionally the diaphragm is flattened, but in the case in which this

3. Lockwood, A. L.: Subdiaphragmatic Abscess, Surg. Gynec. & Obst. **33**: 502-516 (Nov.) 1921.

4. Burke, Joseph: Surgical Aspects of Right Subphrenic Abscess, Ann. Surg. **68**: 383-394 (Oct.) 1918. 1939 (Dec. 17) 1921.

5. Lee, R. I.: Subdiaphragmatic Inflammation with a Syndrome of Physical Signs and Spontaneous Recovery Without Suppuration, J. A. M. A. **54**: 1307-1310 (April 17) 1915.

was noted there was practically no excursion even with forced respiration. Only twice did we find an air pocket beneath the diaphragm, and these showed the fluid level when the patient was in the lateral position. One of these followed a gunshot injury to the chest. In this and two other cases there was an accompanying small empyema, but the diaphragm could be made out distinctly.

The action of the diaphragm in diseases of the thorax has been carefully studied, but its various reactions to disease beneath the diaphragm have been neglected. We occasionally see the diaphragm nonmotile when there is an infection some distance away, as in the appendix, though there is no pain on deep inspiration. Sayle[6] has shown limitation in the movement of the diaphragm in a large percentage of patients with acute appendicitis. We have been able to confirm this in two cases in which a routine fluoroscopic examination was made prior to an examination of the genito-urinary tract for stone in the right kidney or ureter. In both of these cases the pain was that of kidney colic; in one the blood picture and other findings were those of appendicitis, but in the other the absence of motility of the diaphragm gave the first evidence of other trouble than renal colic. Operation in each instance showed an acutely inflamed appendix. In three other cases with less severe reactions in the appendix, the diaphragm was normal.

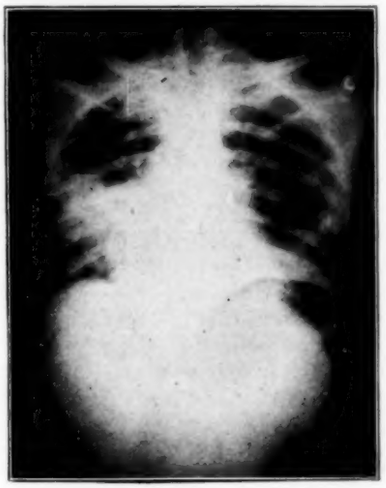

Fig. 4.—Abscess beneath diaphragm on left side, following fracture of eighth and ninth ribs; a fairly large air pocket can be seen; pneumonia in the right lung.

The diaphragm seems to splint the upper abdomen almost as effectively as the recti do the lower quadrants. An elevated and more or less rigid diaphragm is as reliable evidence of infection just beneath, as is a rigid rectus of an acute appendicitis. Some observers report an elevation of the diaphragm with little or no decrease in the excursion in subdiaphragmatic abscess, but this has not been our experience. In every instance we found marked limitation, as compared with the normal side. Shifting dulness on percussion cannot always be explained by what is seen with the fluoroscope. We have not noticed a complete filling in of the costophrenic space by the lungs, as is seen in normal chests.

In all of our cases but two, an empyema was either suspected or diagnosed prior to the use of the roentgen ray. Probably in many instances the needle is draining the abscess itself, when a liter or more of fluid is supposed to be withdrawn from the pleural cavity before the abscess is entered by radical surgical measures.

Abscesses containing gas are not so common. Moore,[7] in 1921, in a study of the subject, found only a few illustrations in the literature. He showed one well illustrated case. Lockwood, however, in a hundred cases, found that one third contained gas. The gas may be from the intestine, from the lungs, or of bacterial origin.

If there is a large collection of fluid in the pleura and no gas in the abscess beneath the diaphragm, the roentgen ray is of little value in the diagnosis, since the position of the diaphragm cannot be determined until the pleura has been drained. This really has little practical bearing, since an empyema of this character would in any event be drained.

Abscess of the liver, cyst, large tumor of the kidney and perinephritic abscess must be considered in the differential diagnosis; but the clinical history, physical examination and laboratory findings usually help to eliminate these.

In massive collapse of the lung, the diaphragm is elevated on the affected side, but the heart is usually displaced to this side instead of upward and to the opposite side, as in subdiaphragmatic abscess.

Promiscuous needling is probably never justified, certainly not until every other method of diagnosis has been exhausted. In the large majority of cases the condition above the diaphragm and a fairly definite location of the abscess beneath the diaphragm can be determined prior to the use of the needle. A large needle is necessary, if any dependence is to be placed in it as a diagnostic measure. Therefore, unless the position of the diaphragm is carefully considered, the pleural cavity may be entered and infected.

REPORT OF CASES

CASE 1.—R. B. M., a man, aged 65, operated on in August, 1921, for an acute purulent cholecystisis, remained in the hospital until September 15, during which time pus drained freely.

Fig. 5.—Right side elevation due to subdiaphragmatic abscess following perforating duodenal ulcer.

During February, 1922, about 1 ounce (30 c.c.) of bile drained daily. The patient had chills and fever, the temperature ranging from 100 to 104, pulse from 84 to 124, and the blood count from 12,300 to 22,100. Physical examination showed dulness, diminished breath sounds, and râles at the right base. Roentgen-ray examination, February 22, disclosed the lungs clear; the aorta slightly dilated; the right diaphragm acutely arched, extending almost to the third rib, with excursion markedly limited. The findings were very suggestive of subdiaphragmatic abscess. Pus was withdrawn from the liver area, in the anterior axillary line, at about the seventh rib.

6. Sayle, Llewellyn: A Study of Diaphragmatic Movements in Acute Abdominal Inflammation, J. A. M. A. **61**: 505-508 (Aug. 17) 1918.
7. Moore, Sherwood: The Roentgenological Findings in a Case of Pyopneumothorax Subphrenicus Dexter, Am. J. Roentgenol. **6**: 83 (Feb.) 1919.

The rib was then resected and the pleura sutured. Several ounces of pus was then withdrawn. The patient died, March 14. Postmortem examination showed small multiple abscesses of the liver, with pus in the anterior intraperitoneal space and in the lesser peritoneal cavity.

CASE 2.—J. W., a man, aged 26, wounded, Sept. 15, 1918, got along very nicely for about a week, when chills, a rapid pulse, and high temperature developed. He also had a good deal of pain and tenderness in the right lower chest. This continued for several days, his condition becoming more serious. September 30, a roentgen-ray examination showed the diaphragm very high on this side, with a large air pocket beneath the diaphragm. The fluoroscopic examination confirmed this, and a definite fluid level could be made out beneath the diaphragm. A diagnosis of subdiaphragmatic abscess with a gas pocket was made. This was drained, and further roentgen-ray examinations, October 9, 14 and 23, showed the progress of the case. November 15, the patient was perfectly well clinically, and a short time later returned to duty.

CONCLUSIONS

1. The occurrence of subdiaphragmatic abscess is still sufficiently frequent, especially in postoperative cases, to be of marked clinical importance.

2. Early diagnosis and treatment usually lead to a cure, while late diagnosis often means serious complications or death.

3. A history of a recent abdominal operation or infection, followed by an unexplained elevation of the pulse and temperature, should require a careful elimination of subdiaphragmatic abscess.

4. The roentgen ray is a very important diagnostic aid, and will almost invariably give valuable and definite information.

5. In any acute upper abdominal infection, an elevated and rigid diaphragm should lead to the suspicion of subdiaphragmatic abscess.

6. A diaphragm normal in position, contour and motility usually eliminates the possibility of an abscess just beneath.

7. Promiscuous needling is never indicated, since in this way the pleural cavity may be unnecessarily infected.

801 West Grace Street.

Bladder Tumors in Anilin Dye Workers.—The occurrence of tumors of the bladder in workers in anilin and a number of like products used in the dyeing industry has attracted considerable notice on the continent in recent years. Rehn, in 1895, was the first to draw attention to the occurrence of cases of tumor of the bladder in workers in fuchsin in the anilin factory at Frankfort-on-the-Main. Leuenberger of Basel published in 1912 collected reports of forty-six cases of tumors of the bladder, of which approximately two thirds were carcinoma and one third papilloma, and three cases of carcinoma of the kidney. He estimated that these conditions were thirty-three times as frequent in the 840 men employed in the anilin industry in Basel, as in the rest of the male population of that town. The condition was rarely seen prior to 1900; but, with the growth of the anilin industry, tumor of the bladder became much more frequent. Leuenberger cites safranin, dianisidin, dihydrothioxilin, congo red and benzopurpurin as capable of provoking vesical tumors. Benzidin and betanaphthylamin are regarded as especially dangerous.—Hope: Industrial Hygiene and Medicine, 1923.

A SIMPLE METHOD FOR DEMONSTRATING MOTOR PARALYSIS OF THE LOWER EXTREMITIES

WITH SPECIAL REFERENCE TO HOOVER'S SIGN

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DES MOINES, IOWA

In 1908, C. F. Hoover[1] of Cleveland described a new sign for the detection of malingering and functional paresis of the lower extremities. Hoover observed that if a normal person, lying in a dorsal position, attempted to lift one of the lower extremities while extended, the heel of the opposite extremity tended to be forced downward in an endeavor to counterbalance the lifting effort expended in the elevation of the opposite leg. If the hand of the observer was placed beneath the Achilles tendon of one extremity and the opposite leg elevated while extended, it was found that the muscular resistance offered by the passive extremity equaled that necessary to elevate the opposite leg. In patients suffering from organic motor paresis of one lower extremity, it was found, when effort was made to elevate the extended and palsied member, that the opposite and unaffected leg made counterpressure downward, whether or not any voluntary muscular strength was exhibited on the affected side.

Fig. 1.—Position of patient with sphygmomanometer in place beneath the right heel: Extremity is elevated sufficiently to clear the leg muscles from contact with the horizontal surface.

The foregoing, in brief, describes the findings of Hoover in normal persons and in those having organic motor paralysis of one extremity. In order to be concise concerning that author's findings in regard to nonorganic motor palsy of the lower extremities, I take the liberty of quoting the following verbatim:

> In two cases in which paresis of one leg was claimed by the plaintiffs in suits for personal injuries, there were wanting the characteristic physical signs to sustain the claim of paresis of the lower extremity as the result of injuries. Furthermore, in both of these cases, when the patient was asked to lift the normal leg off the couch, the leg which was alleged to be very paretic was opposed strongly against the surface when resistance was offered to lifting the normal leg. When the patient was requested to lift the paretic leg, there was an apparent attempt to respond to my demand, but the normal leg did not offer the least opposition. The normal leg lay perfectly limp on the couch. Had the paresis been genuine, the sound leg would have been firmly opposed against the surface of the couch when an uninhibited attempt was made to lift the paretic leg.

There can be no question that Hoover deserves credit for calling attention to the discrepancy that occurs in cases of organic palsy of the lower extremities, and in those in which the palsy is of a functional or of a simulated nature. In fact, I feel that the valuable sign has not been made use of sufficiently, either through ignorance of the sign or because it is not fully understood. In the latter instance, no doubt some confusion might arise owing to the fact that no visible means was at hand whereby the observer could accurately observe

1. Hoover, C. F.: A New Sign for the Detection of Malingering and Functional Paresis of the Lower Extremities, J. A. M. A. 51: 746 (Aug. 29) 1908.

the downward pressure expended by the nonelevated leg, and thus the real significance of the sign might at times be left in doubt or even lost. To overcome this deficiency, I carried out a series of experiments in the hope of finding some simple means of recording the downward pressure exerted by the lower extremities in health and in paretic conditions. The results of such efforts I now present in this preliminary note.

For years, at least among the older neurologists, the hand dynamometer was used as a means of determining the amount of grip present in either hand. For a long time it had been my thought that an instrument to measure the downward pressure of the lower extremities in cases of motor paralysis, either organic, functional or simulated, similar to the recording of the grip by means of the hand dynamometer, might be of value in further elucidating Hoover's findings and at the same time give to those less trained in other means of neurologic diagnosis a method of demonstrating visually the presence or absence of any such difference in the complemental pressure as described by Hoover. Accordingly, at first a spring balance type of scale was used, the patient lying in dorsal decubitus with one heel resting on the platform of the scale. It was thus observed in those cases in which no paralysis was present that the downward pressure exerted by the passive leg resting on the scale was equal, or nearly equal, on the two sides as registered in pounds; whereas in cases in which there was paralysis of one extremity, either organic or functional, variations in the complemental pressure between the two sides occurred.

Fig. 2.—Manner of elevating the opposite extremity, with leg fully extended. The absence or presence of any complemental contralateral pressure can thus be determined and the amount visualized by means of the recording dial.

In view of the impracticability of using scales as an instrument for recording the downward pressure made by the passive extremity, the sphygmomanometer apparatus was brought into use, with very gratifying results. The use of this instrument is simple and apparently is thoroughly accurate for the taking of the necessary readings. The patient is caused to lie flat on his back with the lower extremities extended. The arm band of the sphygmomanometer apparatus is then placed under one heel, and, after the recording dial has been attached, air is introduced. In order to obviate the possibility of the calf muscles coming in contact with the bed, couch or extended chair, usually a book or other firm object is placed beneath the arm band to elevate the leg sufficiently. The air pressure in the arm band is now increased until the upper and lower surfaces of the cuff are separated to such an extent that downward pressure with the heel will not bring the two surfaces into apposition, thus assuring that the heel will always be resting on an air cushion. The amount of air necessary to bring this about was usually found to be sufficient for adults when the recording hand of the instrument reached 30 mm. With the heel resting on the air cushion, the leg entirely free from contact with the bed, and the starting point on the dial observed, the patient is instructed to raise the opposite leg, *while keeping the extremity extended,* to an angle of about 45 degrees with the body. The maximum excursion of the recording hand, particularly the point at which the downward pressure of the heel sustains the hand, is then noted. Usually it is well to repeat the test a time or two to make sure that the readings show no great variations. Variations will sometimes occur if the patient does not fully relax the muscles of the extremity to be elevated. After the reading has been taken on one side, the air cushion is placed beneath the opposite heel. Here, for several reasons, the starting point may be found different than was the one used in trying out for the first set of readings. If too low, more air is introduced; if too high, the release valve is opened and sufficient air allowed to escape until the starting point is uniform. In normal persons, i. e., when no paralysis of the extremities exists, the readings on the two sides are, for all practical purposes, one and the same, clearly demonstrating that Hoover was correct when he asserted that an equal amount of pressure was made downward by the nonactive leg as was necessary to elevate the active limb.

In cases of motor paresis of a lower extremity, the findings, as registered by means of the sphygmomanometer, were interesting. Usually a test of the nonaffected leg was made first, the heel of the palsied extremity resting on the air cushion while the normal extremity was voluntarily caused to be elevated. The test was then reversed, and a reading taken with the palsied extremity elevated. In cases in which the paralysis was only partial, and of some duration, it was found that when the nonparalytic leg was elevated, the maximum reading was sustained, whereas elevation of the organically palsied extremity produced a maximum reading not only lower than the one obtained when the normal leg was elevated, but a reading that was not well sustained, tending to decrease as the muscles of the paralytic extremity failed to maintain the elevation. The following is an illustrative case:

A man, aged 56, had right hemiplegia following a "stroke" sustained the preceding year. There was residual paralysis now mostly in the right lower extremity. Increased tendon jerks, slight ankle clonus, and pathologic toe signs were present on the affected side. Elevation of the left (normal) leg gave a sustained pressure reading of 52 mm. by the right heel, the starting point used being 30 mm. Elevation of the right (palsied) leg gave a maximum reading of 40 mm., gradually declining to 34 mm.

When the paralysis was recent and progressive, it was noticed that attempts to elevate the palsied extremity produced a far greater contralateral pressure on the nonaffected side than occurred when the normal extremity was elevated. In a patient thus tested, the readings, 30 mm. being taken as a basis, were as follows: Elevation of the normal extremity gave a sustained reading of 34 mm. pressure beneath the heel of the paralytic extremity, whereas attempts to elevate the markedly palsied leg gave a reading of 70 mm. pressure downward by the nonaffected extremity. The attempt of the patient to elevate the paralytic extremity naturally brought forth an unconscious effort to aid

on the part of the muscles of the nonaffected extremity, with the result that a greater contralateral pressure downward was the resultant. When the normal extremity was elevated, only a slight pressure was exerted downward by the heel on the affected side, owing to the inability of the patient to fix the paralytic muscles, which resulted in little or no contralateral assistance in elevating the sound limb, and a correspondingly low reading by the sphygmomanometer. Variations in readings between extremities, normal and paretic, must of necessity vary in different individuals; but it would seem that the foregoing is fairly typical of what one may expect to find in those cases in which one leg is organically paralyzed, when the paralysis is by no means complete, or when it becomes more progressive.

Motor paralyses of a lower extremity, either functional or simulated, have not the diagnostic earmarks that stamp so clearly at times a frank lesion of the corticospinal neurons. In hysterical paralysis, for instance, there is an absence of any extensor toe sign, although the tendon jerks may be increased and clonus present. Anesthesia involving the entire extremity, or of a "stocking-like" nature, may be also present, an anesthesia which has no known anatomic basis. While there may be sufficient neurologic evidence to convince the examiner that the paralysis in a given case is purely hysterical in origin, still the application of Hoover's method in determining the departure from the normal, as far as complemental opposition of the limbs is concerned, merely serves to add another strong link in the chain of diagnostic evidence. In a case of hysterical hemiplegia, with hemianesthesia of the left arm, trunk and leg, the sphygmomanometer readings, 30 mm. being taken as a basis, showed a pressure of 38 mm. when the nonaffected right leg was elevated, as against 34 mm. when an attempt to elevate the paralytic left leg was made. It was peculiar to note that while at one time a reading of 34 mm. was observed, the majority of attempts to elevate the paralytic leg resulted in either a slight downward pressure on the right heel, not exceeding 34 mm., or else complemental elevation of the right extremity, which naturally resulted in a negative reading—i. e., below 30 mm. These findings, I feel, are sufficient to show that Hoover's statement concerning functional paralysis is, in the main, correct, namely: "When the patient was requested to lift the paretic leg, there was an apparent attempt to respond, but the normal leg did not offer the least opposition. The normal leg lay perfectly limp on the couch." The use of the sphygmomanometer does show, however, that downward pressure may occur to some extent on the nonaffected side, even in a case in which the paralysis is, without question, of a hysterical origin.

CONCLUSIONS

1. Motor paralysis of a lower extremity may be organic, functional or simulated.
2. Normal persons show little or no variation between the two sides in the counterpressure made by the passively extended leg when the opposite extremity is elevated while extended.
3. The counterpressure phenomenon is still retained, but differs on the two sides when the paresis of an extremity is secondary to a corticospinal pathway involvement.
4. In cases of hysterical paralysis of the lower extremity, counterpressure is still preserved on the affected side, whereas on the nonaffected side, counterpressure is slight, or may be entirely absent.
5. Hoover's sign should be used as a routine in all cases of suspected hysterical paralysis involving a lower extremity.
6. The use of the sphygmomanometer apparatus in ascertaining the amount of complemental counterpressure in paralysis of the lower extremities is simple, accurate and reliable.

IDIOPATHIC SPONTANEOUS PNEUMOTHORAX, APPARENTLY NON-TUBERCULOUS

REPORT OF CASE

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SAN ANTONIO, TEXAS

The occurrence of spontaneous pneumothorax in the course of pulmonary tuberculosis is, of course, relatively not infrequent. Its similar relative rarity in other diseases, apart from traumatism, or in the healthy individual, is the occasion for the report of this case:

REPORT OF CASE

E. H. B., aged 36, married, a grocer, who was seen, Oct. 26, 1922, through the courtesy of Drs. C. E. Scull, P. I. Nixon and J. W. Nixon of San Antonio, and whose family history was negative for tuberculosis, had had no severe illness, and had had no occasion to consult a physician for any cause whatsoever from childhood up to his present illness. For the last eighteen years, however, he had had five or six attacks of asthma a year, usually coming on in the winter months and never lasting more than two or three nights. The attacks always were of no great severity, and were relieved immediately by sitting up in the fresh air. There was never any cough between attacks. He was subject to frequent colds, possibly of vasomotor origin.

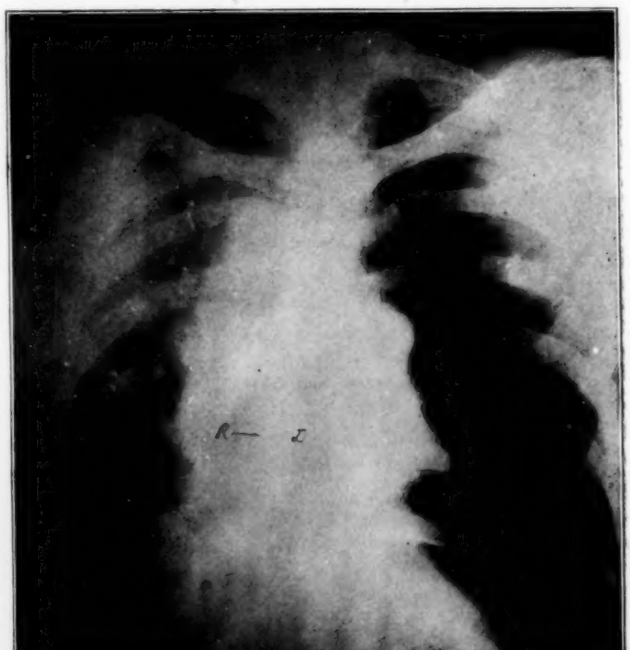

Fig. 1 (Sept. 7, 1922).—Huge spontaneous pneumothorax with total lung collapse; no bands of adhesions.

While lifting a heavy sack of beans (80 pounds), Aug. 19, 1922, he felt a sensation of discomfort and smothering in the left part of the chest. Soreness in the chest commenced at once, with some shortness of breath, especially noticeable on even slight exertion. He consulted a physician three hours later, and was advised to go to bed, though really he did not feel ill enough to do so. He noticed a tight pressure cough with every change of position, but there was no expectoration. He had a slight fever for two weeks. He was referred

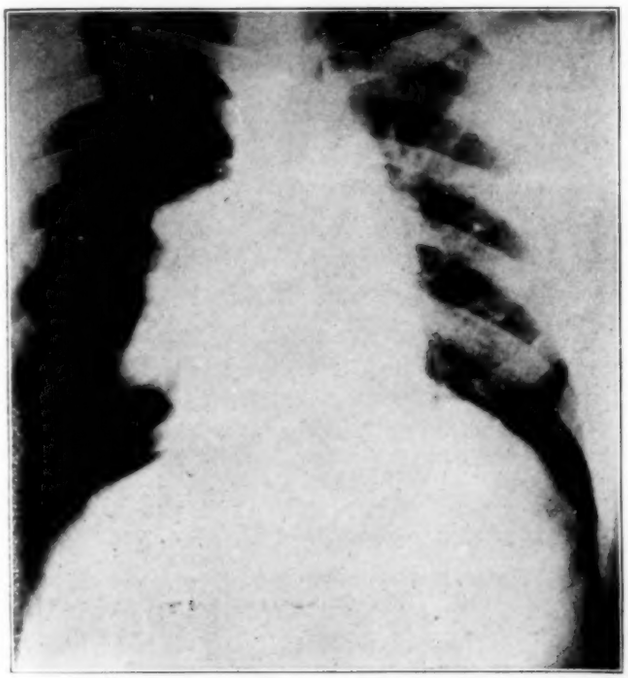

Fig. 2 (October 27).—Appearance after removal of 800 c.c. of air; roentgenogram taken before operation revealed identical condition seen in Figure 1.

to Drs. Nixon and Scull of San Antonio, September 7, who recognized the condition present.

Physical and roentgen-ray examinations at that time revealed a total collapse of the left lung, with cardiac dislocation to the right, causing no discomfort to the patient beyond rapidity of the pulse and shortness of breath on exertion. The pleural cavity contained no fluid. In view of the ordinary tendency of the air to be absorbed promptly in these cases, the patient was advised to rest and to return in a month for observation.

October 26, seven weeks later, he returned with the statement that he felt fairly well, but was still very short of breath on exertion. Physical and roentgen-ray examinations showed the thoracic condition as at the initial examination, the collapsed lung not showing the slightest tendency to expand—the pleural cavity evidently not having absorbed any of the extravasated air, instead of most of it, as should ordinarily have taken place. The absence of fluid and infection precluded a persisting opening in the tear. Because of the danger of a permanent loss of the lung, which had now been totally collapsed nine weeks, and subsequent later collapse of the thoracic wall and permanent disability, it was decided to remove part of the air.

October 27, under local anesthesia, a needle was inserted into the pleural cavity, attached to an artificial pneumothorax apparatus with the bottles reversed. A manometer reading of + 1 cm. of water was obtained, with little or no evidence of the respiratory excursion. Then 800 c.c. of air was slowly withdrawn, leaving a manometer reading of — 1.5 cm. Owing to beginning substernal distress at that point, the air withdrawal was stopped. No shock or pain followed. The roentgenogram taken that afternoon showed restoration of the normal convex diaphragm dome and the lung about one-third expanded.

It is, of course, a well known fact that partial removal of a serous pleural exudate, which previously had shown no tendency to absorption, will often be followed by its complete disappearance. Evidently a similar process was called into play in this case, subsequent to the partial air removal. Physical and roentgen-ray examinations, November 8 and 22, showed such rapidity of air absorption and lung expansion that further operative measures were deemed superfluous. December 18, physical and roentgen-ray examinations showed the air entirely gone and the lung expansion complete. None of the usual stigmas of either active or inactive tuberculosis could be found by either method of examination, and the patient was completely free from cough or other suggestive symptoms.

REPORTS IN THE LITERATURE

Weber [1] says that there are practically 200 cases on record in which this accident has occurred in apparently healthy persons, without obvious exciting cause beyond sudden respiratory efforts.

Terry [2] reports a case of a young man in good health who had had no previous illnesses of any kind, and in whom several routine chest examinations had proved normal. While he was taking a cold shower, something was felt to give way in his chest, and a total spontaneous pneumothorax was discovered. Symptoms were rather trivial, and a return to normal occurred in about four weeks. No cause for the accident was discovered. Clinically, there was nothing further to suggest tuberculosis.

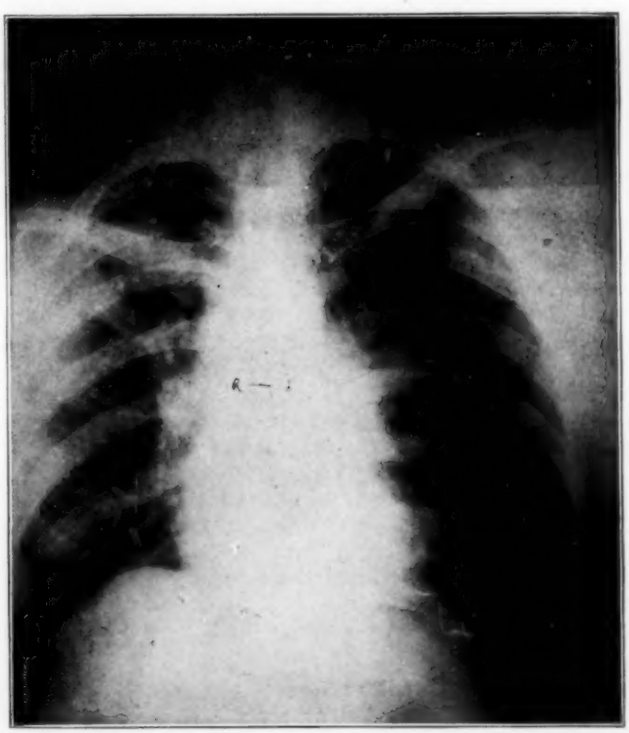

Fig. 3 (November 8).—Rapid absorption of air, and lung expansion.

Crockett [3] reports a similar case in a young athlete, also without tuberculosis, though modifying this statement with the remark that pleuritic adhesions seen in the roentgenogram indicated that there nevertheless

1. Weber, F. P.: Spontaneous Pneumothorax, Practitioner **102**: 190 (April) 1919.
2. Terry, A. H.: Spontaneous Pneumothorax of Uncertain Etiology, J. A. M. A. **66**: 1776 (June 3) 1916.
3. Crockett, James: Spontaneous Pneumothorax, Lancet **2**: 330 (Aug. 12) 1922.

may have been an active tuberculous lesion of the lung at some time previously.

Hawes [4] reports a case in which, between 1911 and 1921, there had been several bilateral spontaneous pneumothoraces, first in one side, then the other, occurring at times every few months. All roentgen-ray findings between attacks were negative. Hawes was disposed to regard this case as tuberculous, though there had never been a positive sputum, and his last

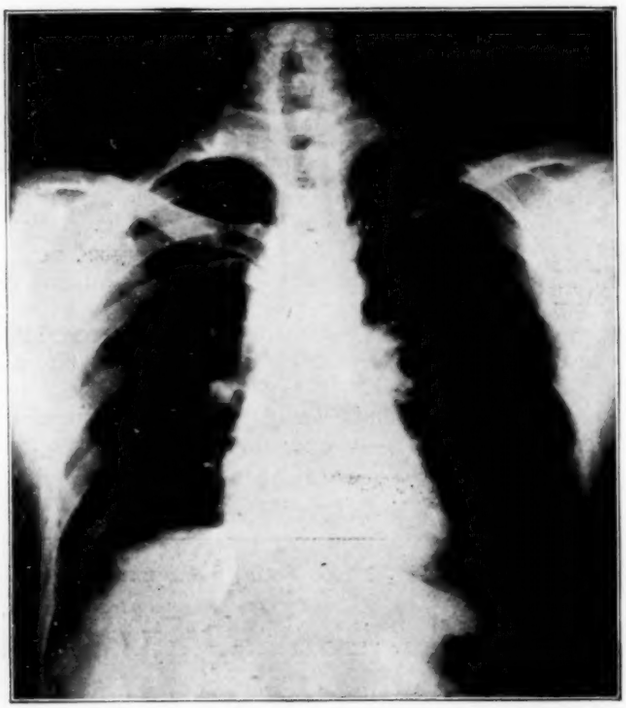

Fig. 4 (November 22).—Further absorption of air, and lung expansion.

physical examination report of 1919, in my opinion, is not conclusive. When last heard of in 1921, this patient was apparently able to do light work, though he had one or more probable recurrences of his spontaneous pneumothoraces after 1919.

Pierson [5] reports four cases, one in a new-born child. Only two of these four patients were definitely tuberculous. He states that about ninety such nontuberculous cases were reported in the literature up to the time the paper was read. Curiously enough, in the discussion of the paper before the San Francisco County Medical Society, Sept. 4, 1917, occurred the report by Dr. E. S. Kilgore of the only other case I have been able to find in the literature in which there was any necessity to withdraw the air in any of these nontuberculous cases. Here the condition of lung collapse had lasted a year.

Hamman [6] reports five cases, in two of which the patients were definitely tuberculous, but in three of which the accident occurred in persons in good health and in whom no evidences of tuberculous disease could be found or developed later, one after one year, one after two years and one after five years. However, he regards these cases all definitely tuberculous, and due probably to the rupture of a pleural adhesion into a small peripheral tuberculous focus, with closure of the focus following the lung collapse.

Weber [7] reports a fatal case of spontaneous pneumothorax occurring on the seventh day of influenzal bronchopneumonia. He quotes seven similar cases of other authors, four with recovery. He quotes a report of 7,868 cases of pneumonia up to 1908, with only three cases of spontaneous pneumothorax.

Berkley and Coffen [8] report two cases due to influenzal bronchopneumonia, only one of which was tuberculous. They state that in many of their 1,700 bronchopneumonia cases, necropsies showed ruptured air sacs in the peripheral borders of the lungs, and in many cases numerous adjacent air sacs ruptured, forming large air spaces, which they termed emphysematous excavations. These emphysematous blebs were found in many cases at postmortem in which spontaneous pneumothorax was absent. They were also able to recognize these blebs roentgenographically. They believe these cases potential pneumothorax cases, reporting one actual rupture from this cause.

Abt [9] reports a similar case in a child with bronchopneumonia.

Meyer [10] reports a case of bilateral spontaneous pneumothorax with necropsy, the case having been seen in the third attack of the year. The postmortem revealed extreme emphysema of both lungs and no tuberculosis.

However, cases of spontaneous pneumothorax due to emphysema certainly must be very rare. I was

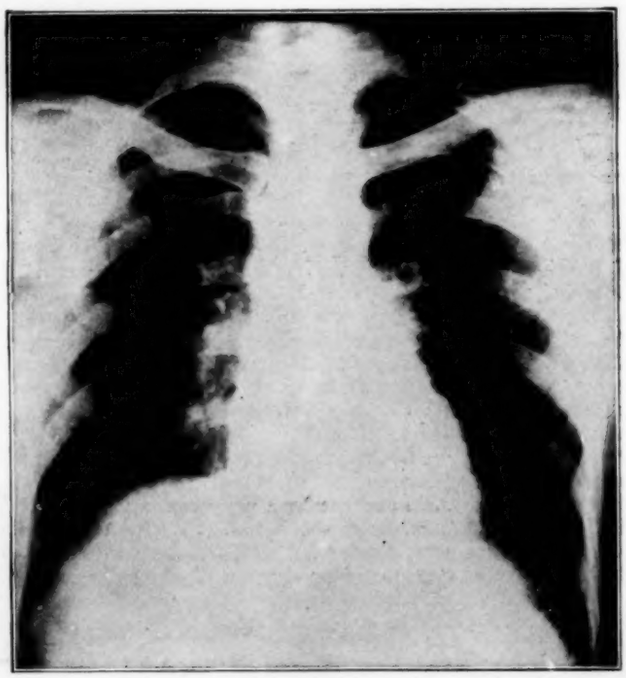

Fig. 5 (December 18).—Complete absorption of air, and full expansion of lung without roentgenographic evidence of tuberculosis.

unable to find a single case in medical literature of spontaneous pneumothorax due to a ruptured emphysematous vesicle, wherein a definite specific history of

4. Hawes, J. B.: A Case of Spontaneous Pneumothorax, Boston M. & S. J. **186**: 528 (April 20) 1922.
5. Pierson, P. H.: Spontaneous Pneumothorax, Boston M. & S. J. **178**: 385 (March 21) 1918.
6. Hamman, Louis: Spontaneous Pneumothorax, Am. J. M. Sc. **151**: 229 (Feb.) 1916.
7. Weber, F. P.: Spontaneous Pneumothorax in Influenzal Pneumonia, Brit. M. J. **1**: 9 (Jan. 4) 1919.
8. Berkley, H. K., and Coffen, T. H.: Generalized Interstitial Emphysema and Spontaneous Pneumothorax, J. A. M. A. **72**: 535 (Feb. 22) 1919.
9. Abt, I. A.: Spontaneous Pneumothorax, M. Clinics, Chicago **2**: 1291 (May) 1917.
10. Meyer, Alfred: Case of Bilateral Spontaneous Nontuberculous Pneumothorax with Autopsy, New York M. J. **105**: 1238 (June 30) 1917.

previous asthmatic attacks was mentioned, and asthma is, of course, our common cause of emphysema.

Patients who recover, of course, offer no postmortem studies, and the few cases coming to necropsy have presented other obscuring conditions. That these cases of idiopathic spontaneous pneumothorax in apparently healthy persons are definitely and invariably due to the rupture of a subpleural minute tuberculous focus, followed by its subsequent entire healing, is difficult of proof. Should healing of the focus not occur, active pulmonary tuberculosis should follow months or years later. Case 1 of Hamman's series is the only one I have been able to find.

Recurrence of these pneumothoraces is not uncommon. Only the future, in this particular case, can determine the question of recurrence. Whether his accident was due to the rupture of an emphysematous bleb from asthma or was due to the rupture of a tuberculous focus is impossible to be stated definitely. Certainly, careful roentgen-ray studies reveal no evidences of tuberculosis, parenchymal or pleural, and no adhesions. The expanded lung, by physical examinations, shows no râles or adventitious breath sounds suggestive of tuberculosis.

RECURRING ILEOCECAL INTUSSUSCEPTION

REPORT OF A CASE COMPLICATED BY TUBERCULOSIS OF THE INTESTINE

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SANTA MARIA, CALIF.

The cause of intussusception is not always clear. It is easy enough to understand how a pedunculated tumor large enough to be caught in a peristaltic wave ahead can cause the intestinal wall at its base to become invaginated. But what is the particular cause, or causes, responsible for intussusception occurring most frequently at the ileocecal junction? Is it due to a too mobile cecum, or to a less mobile one, as either condition could mechanically predispose to invagination? Or is it due to violent enterospasm of the small intestine just at its juncture with the cecum? For the latter reason, ileo-ileac invagination does occur. With such an enterospasm, however, intussusception into the cecum could not occur if the ileocecal valve were small enough, and of sufficient firmness.

One can understand that the small intestine, having far greater peristaltic activity than the sluggish colon, might be constantly tending to invaginate itself. But there are other conditions that prevent it, two of which stand out prominently: (1) a small, firm ileocecal valve, and (2) a tendency of the small intestine to kink itself just before the junction. It would not be hard to conjecture that a prominent Lane's kink is the result of Nature's effort to prevent intussusception by diverting the axis of the small intestine peristalsis.

It was just these two theories that tempted me in the case here reported to make futile efforts at narrowing effectively the ileocecal lumen, on the one hand, and, finally, to succeed in diverting the axis of peristalsis by performing a lateral anastomosis between the ileum and the cecum.

It seems that one should apologize for finding it necessary to operate for an intussusception so many times before discovering an effective cure for the condition. At the same time, the mere reduction of the intussusception, and the anchoring of a part of the cecum or ileum or mesentery, as is usually practiced, does not offer sufficient reason for the cure of the pathologic state, and prevention of its recurrence. The case here reported clearly demonstrates this fact, it seems to me, as will be shown in reciting the steps taken in its cure.

REPORT OF CASE

History.—M. D., a girl, aged 11 years, referred by Dr. R. W. Brown, March 10, 1921, with the diagnosis of intussusception, when seen, ten hours after the initial attack, was suffering with severe abdominal cramps, occurring cyclically. The attack would begin rather sharply, reaching its acme of pain after about two minutes, and gradually subsiding to a steady cramp. This cycle recurred every few minutes, accompanied by nausea and vomiting. At the beginning of the attack, the bowels moved without aid; but subsequent efforts by the use of high enemas were unsuccessful, except for the return of blood-stained fluid and mucus. There was only slight rigidity of the right abdominal wall, and a mass of considerable size could easily be felt through it, in the right umbilical region.

First Operation.—Twelve hours after the attack began, under gas-ether anesthesia, a Kammerer-Battle, right rectus incision, with retraction of the rectus muscle, was made. A large, sausage-shaped mass was delivered into the wound, which proved to be an ileocecal intussusception, including the proximal end of the appendix. The reduction was not easy, as traction on the ileum and an attempt at sliding over the invaginating walls was ineffectual. We attempted then, successfully, the following technic:

Technic of Reduction: The upper end of the entire mass was grasped between the fingers of either hand, while the two thumbs pressed firmly but gently on the contained mass; the fingers then slid and drew the outermost intestinal walls toward the operator. At the same time the assistant made gentle but firm traction in the opposite direction on the protruding ileum. This effort was constantly repeated until reduction was complete. In effect, the effort was similar to that of reduction of a paraphimosis. It was found that gases were imprisoned between the intestinal walls, forming a cushion, which prevented the walls from sliding over; for when this was released, a fact which could be heard, and felt by the fingers, the reduction became easy.

The invagination consisted of about 10 inches of the ileum, a part of the cecum, and the proximal end of the appendix. Effort was made to determine a palpable cause for the intussusception, but no tumor or ulceration could be found. The mesenteric glands in the vicinity were enlarged. There was a prominent cuff of fat partially surrounding the ileocecal junction, and this, together with a very patent ileocecal valve, was thought to be a predisposing factor. The cuff was inverted by suture into the bowel lumen, and with an additional mattress-inverting suture, the patency of the ileocecal valve was considerably reduced. The appendix was removed, and the caput coli and terminal ileum were each sutured by a single mattress to the peritoneal reflection from the pelvis. The wound was closed in the usual manner.

Progress of the case was uneventful. The bowels moved on the second day, and the patient was out of bed on the third. The wound healed by first intention, and the skin stitches were removed on the eighth day.

The symptoms recurred, April 2. The attack was acute, with symptoms exactly as in the initial onset, but all the symptoms were immediately relieved by high enemas given in the knee-chest posture. As the bowels moved daily, the patient was allowed to go home, April 7.

There was a recurrence of the attack, April 19, unrelieved by enemas. A large mass was felt in the right umbilical region.

Second Operation.—Six hours after the attack, an incision was made parallel to the first one, and to the right of the umbilicus. There were considerable omental and intestinal adhesions. On separation of the omentum from the intestines, these were found to be thickly covered with miliary tubercles; the mesenteric glands were much enlarged. About 1 foot of ileum was invaginated into the cecum. The intussusception

was easily reduced by the technic previously described. On account of the presence of the large number of tubercles, no further radical means for prevention of recurrence was undertaken. It was hoped that the dense adhesions which ordinarily follow would in themselves prevent future invagination.

The further course was uneventful; the temperature and pulse remained normal; the bowels moved well on the second day; the patient was out of bed, April 25. She left the hospital, April 29, in excellent general and local condition.

The patient remained well, with steady gain in weight until July 18. The attack really began on the evening before with slight abdominal pain in the umbilical region. In the morning the pain became acute, of the usual cyclic type, accompanied by vomiting, and bloody mucus from the bowels.

Third Operation.—Six hours after the acute attack, a cut was made through the first incision. There were no adhesions to the abdominal wall. The intestines, however, in this region were very adherent. It was interesting to note that they appeared healthy and not without tone, in marked distinction to the previous time, and with complete disappearance of the tubercles. After the reduction, as before, the ileocecal orifice was found to be very patulous, and was considerably narrowed by three puckering mattress sutures of chromic gut, encircling the lumen of the intestine at this junction. The abdominal wound closed as usual.

There was slight temperature reaction, to 100 F., for three days following the operation. The temperature became normal on the fourth day, and the bowels moved well. There was complete subsidence of all symptoms. The stitches were removed on the ninth day, the wound having healed.

The patient was kept in bed a longer time on this occasion, but after two weeks she was allowed up and about. The general and local condition was excellent. July 30, the bowels moved normally, without cramping; no mass was to be felt; otherwise the local and general condition was excellent. There was recurrence, December 19, of a typical attack, unrelieved.

Fourth Operation.—Four hours after the acute attack, an incision was made over the last one, but extended downward in the right iliac region. Omental adhesions were encountered, not to the wound line, but beyond and lateral to it. A large mass consisting of cecum with invaginated ileum was delivered into the wound. Reduction was performed by the previous technic. No tubercles were found. The ileocecal orifice was as patulous as before, easily admitting three fingers.

Still imbued with the idea that the patulous ileocecal valve was a sine qua non for an invagination at this point, we again decided to narrow the lumen, but with three Halsted inversion stitches of Pagenstecher linen following about the lumen of the bowel. The lower end of the cecum was again anchored to the pelvic peritoneal band to prevent excessive motility. The mesentery of the ileum near the cecum was reefed, also with Pagenstecher linen, imitating a Lane's kink. The wound was closed as usual.

December 22, the pulse, respiration and temperature were normal; the bowels moved well; there was subsidence of all untoward symptoms; the patient was allowed out of bed.

The subsequent course was uneventful. The wound healed by first intention; the bowels moved well; Jan. 19, 1922, the general condition was excellent. Local examination revealed no definite mass in the right iliac region; there was some tenderness on deep pressure.

There was a recurrence, February 11. The patient did not suffer so acutely, but she was more nervous, and had pain in the right side of the abdomen. Palpation disclosed a much smaller mass than in the former attacks; she was relieved by enemas.

February 12, the bowels moved well; all symptoms were relieved; the mass was not felt. The pulse, respiration and temperature were normal; she was sent home.

There was a recurrence, February 14. The attack was markedly acute, and a large mass could be felt in the right umbilical region.

Fifth Operation.—This was undertaken within six hours after the beginning of the attack. There were adhesions all about, but particularly between the omentum and the intestinal coils. These were released, and the intussusception was reduced as usual. The ileocecal orifice was as patulous as before, and no evidence of the Pagenstecher stitches was found. It seemed that everything possible was engulfed in that insatiable cecal maw—bowels, adhesions, et al.

The futility of anchoring by stitches, or extensive adhesions even, was thoroughly brought home, and no further attempt was made to narrow the ileocecal lumen.

Two procedures were now open: either resection of the cecum and the lower part of the ileum, with anastomosis, or ileocecostomy. After all the previous efforts, which thus far had preserved the life of this little patient, it was felt that the graver radical operation (resection) should be reserved for a possible last hope. Therefore a lateral anastomosis of the ileum and the cecum was done.

The ileum was brought down to near the lower end of the caput coli, and there anastomosed to avoid the cecal pouch which would remain if anastomosed above the ileac junction. Pagenstecher linen was used for the Czerny-Lembert, and No. 0 chromic for the through and through intestinal suture. A stoma somewhat larger than what would admit the thumb, in all diameters, remained after closure. The abdominal wound was closed as usual.

February 20, recovery had been uneventful. The wound healed by first intention. The bowels moved well; the appetite was fair; the pulse, respiration and temperature were normal; the general condition was good, though the patient looked rather peaked. She was sent home.

Jan. 31, 1923, after the lapse of almost a year, the patient was robust, and had been entirely free from any abdominal distress since the last operation. She was active in athletics, being on the basketball team of her school. She had two well healed scars, one 2 inches, and the other 4 inches in length. There was no hernia or lack of muscular tone or strength. No mass could be felt in the right iliac region.

Stereoscopic roentgenograms revealed the barium entering the terminal ileum, and both the cecum and the ileum lay in the right iliac fossa, where they were anchored at the last operation.

COMMENT

At the first operation there were only very slight, young adhesions at the invaginated site, operation being performed twelve hours after the diagnosis was made. All the other operations were performed within six hours after the sharp attack of cramps, and at each, extensive adhesions, even of the intussusception, were found. This would indicate that the invagination had taken place to a certain extent without causing distress, and without complete obstruction. But it would seem that when a fresh part of the ileum was drawn into the invagination, the characteristic attack, with complete obstruction, ensued.

In reviewing the conditions found at the different operations on this patient, I cannot imagine that any but the densest adhesions, which would immobilize both cecum and ileum, could prevent a recurrence of invagination. This was the case here, where adhesions between the apposed serous coats were found on the invaginated intestine. How, then, can the simple anchoring of the bowel to any part of the abdominal cavity be effective in preventing invagination, unless it is done to such a great extent as seriously to interfere with the motility and function of the intestine?

This advances the idea that if the axis of peristalsis of the ileum is diverted, the beginning invagination cannot proceed beyond this point. The kink, thought by Lane to be pathologic and perhaps inimical, may, after all, have its function in performing this very act, i. e., diverting the onward intestinal rush.

A small, firm ileocecal orifice must, axiomatically, prevent invagination at this point. It was this fact that caused us repeatedly to make the effort of its permanent narrowing, the wedgelike action of the con-

tained intestine tearing out the stitches, however, and rendering the procedure ineffective.

It would seem that the rational effort should be to divert the axis of ileac peristalsis. Ileocecostomy is ideal in accomplishing this, when the general condition of the patient permits, for the important reason, also, that the function of bowel evacuation is not interfered with.

All means of extensive anchoring of the bowel or mesentery to the peritoneum of the abdominal walls or to the neighboring intestine must eventually seriously interfere with bowel function, so that, while mortality is averted, morbidity is substituted. In the former method, both may be averted.

From reports of cases appearing in the literature during the last ten years, I have been able to collect only twelve cases of recurring intussusception. Though this may be a relatively small number, from the reports, these recurrences are from cases that evidently were originally thought to be cured. Probably, many fatal cases do occur, but are not reported, when simple reduction, without radical preventive measures against recurrence, is practiced.

Sufficient attention has not been given by surgeons to this dangerous pathologic condition, and one awakens to the need of more published experience to aid in the cure when the case is encountered.

I report in detail this obstreperous case because of the stimulus it may afford to surgeons to standardize operative procedure in these cases; also to suggest a simple technic for the reduction of the invagination, and to accentuate the effectiveness of the ileocecal anastomosis as practiced in this case, by attaching the ileum below, to the caput coli, rather than above its junction.

A TYPE OF POSTOPERATIVE FEVER, PROBABLY MALARIAL RELAPSE *

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RICHMOND, VA.

These three cases are typical of a certain group seen at St. Elizabeth's Hospital during the summer and early fall months of each year.

REPORT OF CASES

CASE 1.—W. F. S., a man, aged 28, physician, admitted, Sept. 5, 1922, had always lived in South Carolina. He complained of attacks of gnawing epigastric pain accompanied by nausea and weakness, coming from one to two hours after meals, and relieved by food and soda. These attacks had lasted for six years. One year, and again two weeks, before admission to the hospital he passed large, tarry stools for several days, and on the last occasion he spat up some fresh blood. The family history and past history were irrelevant, except for "malaria" during childhood.

The patient was tall and fairly well nourished, with marked pallor and a "washed-out" appearance; the physical examination was otherwise essentially negative. Routine urine, feces, phenolsulphonephthalein kidney function, and Wassermann tests were negative. Gastric analysis showed a slight hyperacidity and a faintly positive benzidin test for blood. Blood examination revealed a mild secondary anemia, a white count of 6,000, differential count, lymphocytes, 36 per cent., transitionals, 1 per cent., and neutrophils, 63 per cent. No malarial parasites were noted in the blood smear. Fluoroscopic examination of the gastro-intestinal tract following a barium meal showed a persistent filling defect in the first portion of the duodenum. A diagnosis of duodenal ulcer with mild secondary anemia was made.

A duodenal ulcer was found at operation, September 8, and both the appendix and gallbladder were chronically inflamed and adherent. The operation consisted of appendectomy, cholecystectomy, excision of the ulcer and pyloroplasty (Horsley).

Nausea and vomiting were much more marked than usual after such an operation. Six days after operation the patient had in the afternoon a slight chill, after which the temperature was 101 F. The next afternoon, one hour later, he had a decided chill, following which the temperature was 102. The white count was 12,000 and neutrophils 80 per cent., which is about normal for a person recovering from a rather extensive operation. No malarial parasites were found in blood smears. Thorough physical, urinary and wound examinations gave no evidence of any cause for the chills and fever. The patient was given 2 grains (0.13 gm.) of calomel, followed in one hour by 6 ounces (175 c.c.) of magnesium citrate; quinin bisulphate, 5 grains (0.3 gm.) every six hours, was prescribed for four days. Within a few hours after this treatment was begun the patient felt much better, and the temperature came down to 98.6 the following morning. It remained about normal for eight days, when it rose in the afternoon to 100. Quinin was given as above for three days, after which convalescence was uneventful.

CASE 2.—Miss B. C., aged 46, entered the hospital, Oct. 2, 1922, for operation on an abdominal mass of four months' duration. She had always lived in Virginia. The family history and past history were irrelevant, except for malaria with chills and fever when she was 5 years old.

Physical examination was essentially negative, except for a large, firm, nodular mass attached to the uterus. Routine blood, urine, feces, phenolsulphonephthalein kidney function and Wassermann tests were negative. A diagnosis of uterine fibroids was made, and a hysterectomy and appendectomy were done the day following admission.

The second day after the operation she began to have a temperature varying from 99 F. in the morning to 101 during the evening. This continued for one week. The white count was 11,600. This was accounted for by the development of a stitch abscess which was treated by constant hot supersaturated boric acid dressings and insertion of a small, superficial drainage tube, which was irrigated with 1 per cent. chloramin-T solution twice daily. For four days her temperature varied between 99.6 and 100, and the wound was doing well. The next afternoon (twelfth postoperative day) the temperature was 102.2. It returned to the usual level the following day. On the fourteenth postoperative day the morning temperature was 97.5, and at noon 101. About 1:30 p. m. the patient had a mild chill, following which the temperature was 103.4. The white count was 11,000, lymphocytes 12 percent., neutrophils, 88 per cent. No malarial parasites were found in the blood smear. Thorough physical, urine and wound examinations gave no evidence of the cause of the chill and fever. The patient was given 5 grains (0.3 gm.) of quinin bisulphate every four hours for three and a half days. The day following the chill her temperature returned to its usual level, varying from normal to slightly above normal. After six days the wound infection cleared up and the temperature remained normal. Quinin therapy was continued at intervals of a few days.

CASE 3.—A. A. D., a man, aged 25, student, who had lived practically his entire life in a malarial district of South Carolina, entered the hospital Aug. 14, 1922, for repair of a deformity of the right forearm and hand which had resulted from an injury in a cotton gin nine and a half months before. His family history and past history were irrelevant, except for mild attacks of malaria with chills and slight fever for several consecutive summers, for which he had received no special treatment.

The patient was small and thin, with contraction deformities of the right forearm, hand and fingers. Otherwise the physical examination was negative. Routine blood, urine, feces phenolsulphonephthalein kidney function, and Wassermann tests were negative.

The patient had five plastic operations performed, two under ether anesthesia, and three under local anesthesia. He progressed satisfactorily for thirty days with only a slight

* Read before the Staff Meeting of St. Elizabeth's Hospital, Oct. 24, 1922.

occasional afternoon rise in temperature, which could be explained by the condition of the wound. The last operation was performed, September 14, and the day following the temperature rose to 101.4, returning to 99 in the morning and 101.7 the next afternoon. Two days of practically normal temperature passed, and then, September 19 a rise to 102 occurred, which persisted for twenty-four hours. Thorough physical, urine and wound examinations gave no evidence for cause of fever. Blood examination showed a moderate increase in the white cells, 28 per cent. lymphocytes, 72 per cent. neutrophils and no malarial parasites in the blood smear. Quinin bisulphate, 5 grains (0.3 gm.) every six hours, was prescribed for five days. The patient showed marked symptomatic improvement and a return of the temperature to normal within twelve hours after quinin was begun. Further convalescence was normal.

COMMENT

Most fevers which follow operations can usually be explained by wound sepsis, pyelitis, phlebitis, pulmonary or upper respiratory infections, severe dehydration, or other less common postoperative sequelae. When these usual complications are ruled out, when the patient has a definite history of having had malaria and presents the symptoms of malaria, all of which disappear after quinin therapy, it would seem to indicate that the condition is a malarial relapse.

A review of the literature on malarial relapses (prepared by the information service of the Rockefeller Foundation) mainly of British, Italian, Dutch and American sources, shows that it has long been recognized that malarial relapses may occur after long intervals. A number of authentic cases can be cited, which are thought to prove that the period of latency in malarial infections is often long enough to justify the conclusion that a proportion of the attacks of malaria developing in a given season are malarial relapses from infections of the previous season.

The theory of the etiology of relapse in malaria, which is supported by the majority of authorities of today, is that the diminution in the number of malarial parasites to a certain level at which active symptoms disappear may be due either to the action of quinin or to the protective forces of the body, or to both. The process of asexual reproduction is continued through the interval without modification or interruption, and no abnormal change occurs in the form of the parasite. The number of parasites is small, however, so that no symptoms are produced, until, for some reason, such as exhaustion, exposure to extremes of temperature, unfavorable climatic conditions, surgical operations, or illness from some other disease, the bodily powers of resistance are lowered, when the parasites multiply rapidly and relapse occurs.

One point against considering the fever of the foregoing cases as due to malarial relapse is the fact that in none of them has there been found malarial parasites. Several blood smears of each patient were examined. In this type of malaria, however, the parasites are supposed to be held in a latent state in the red cells of the internal organs, chiefly the spleen, and they cannot be found in the peripheral blood. This probably accounts for the failure to demonstrate them.

Bass [1] says:

> It has been well established again, as is recognized by the planter in malarial country, that malaria feeds on indolence and inactivity, and that recovery is more sure and speedy for him who keeps going while taking his quinine. Among troops the observation has been general that men excused from duty or sent to hospital, while not necessarily worse than others who kept on with their duties, invariably become worse and less amenable to treatment. Again it has been a rare thing for an officer to be actually incapacitated with malaria, while the men who came before the medical officer for malaria almost certainly reached hospital and succumbed to a period of sympathetic treatment, with relapse after relapse, owing to interrupted, inefficient, and insufficient quinine treatment.

In many persons the initial malarial attacks cause the mildest illness, and many have the infection without any symptoms that are recognized as due to malaria. It is, therefore, possible for similar symptoms and conditions to occur in a patient who gives no history of malaria. Quinin is an antipyretic, but it lacks the power of permanently reducing fever and relieving the type of symptoms seen in the three cases cited above, unless the condition is due to malaria. Bass claims that if the therapeutic test uniformly causes clinical symptoms to disappear, it can be depended on to establish malaria as the diagnosis in suspected cases.

The standard treatment recommended by the national committee should be followed in these cases. It consists of 10 grains (0.65 gm.) of quinin sulphate three times a day for a period of three or four days to relieve the acute symptoms, to be followed by 10 grains every night before retiring for a period of eight weeks, to cure the infection.

SUMMARY

1. Certain postoperative fevers occurring during the summer and early fall months in patients who have lived in a malarial district are due to malarial relapses.

2. In three typical cases of postoperative malarial relapse, the therapeutic test for malaria caused the clinical symptoms to disappear.

3. The standard treatment recommended by the national committee should be followed in these cases.

1. Bass, in Nelson Loose-Leaf Medicine 7: 345.

SKIN PREPARATION IN HYPODERMIC NEEDLE PUNCTURES

GAS BACILLUS INFECTION WITHIN TWELVE HOURS AT SITE OF HYPODERMIC PUNCTURE

C. E. TENNANT, M.D.
DENVER

The use of the hypodermic syringe is not altogether free from danger, even though administered under the most careful aseptic conditions. It has long been known that the skin is a common carrier of pathogenic organisms, but the universal use of the hypodermic syringe is so common, and unfavorable results so rare, even when carelessly used by the layman, that it would seem quite impossible for a tragedy, such as is here recorded, to have occurred when the most strict aseptic conditions were present.

Alcohol for commercial use, and even for hospital administration, is not what it was before the Volstead Act. It is quite probable that it should not now be depended on as an antiseptic as it formerly was when made by the old process in regular distilleries, since much of the alcohol now being purchased is a by-product in the manufacture of "near beer," the alcohol being extracted at the last moment, in order to make the product approximate real beer and yet meet the requirements of present legislation.

Alcohol rubbed over the skin causes no discoloration; hence there is no target or landmark apparent to which the point of the needle may be directed in order to come well within the so-called sterilized bacteria-fixed

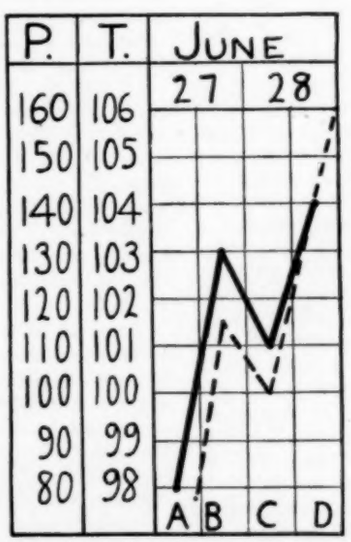
area. Under such conditions, no doubt, it frequently happens that the hypodermic needle is plunged into an altogether unprepared spot. Consequently, although the technic of hypodermic syringe and solution sterilization may be ever so carefully executed, the unexpected happens, since the needle, passing through an unclean area, may carry with it whatever is lodged on the skin.

I know of no more embarrassing or troublesome postoperative complication to the surgeon and the hospital authorities, and nothing more distressing to the patient, than a postoperative infection; abscess or systemic bacteremia resulting from inoculation at the site of a hypodermic injection.

While it is true that there has been some discussion, pro and con, relative to any preliminary skin preparation prior to the use of the hypodermic needle; until it has been successfully shown that we can do routine operative work without prior skin preparation, or until we can demonstrate 500 consecutive cases without postoperative infection directly traceable to skin contamination, I shall not be quite ready to accept the argument and abandon the usual postoperative routine.

The use of iodin as the agent best adapted to skin preparation has been universally accepted, and why alcohol is permitted, or recognized as equally effective when applied to hypodermoclysis, or the administration of drugs by hypodermic needle, is beyond comprehension, especially since the commercial forms of alcohol are generally used. Many, however, endorse it, and consequently hospitals permit the habit, while nurses and interns are growing more in the habit of using alcohol, because it is to be found in every patient's room and at every ward bed.

The best evidence we have that the patient's local resistance and the mechanical wiping of the needle by the closely fitting epidermis are great sources of protection is the fact that we have so few cases of infection following the use of the hypodermic needle; but this is not sufficient justification for not throwing all barriers we can command around the patient in order to minimize postoperative accidents and distress.



Continuous line, temperature; broken line, pulse; *A*, gastro-enterostomy and appendectomy; *B*, hypodermic injection of atropin sulphate; *C*, crepitation discovered in right thigh; *D*, death after two hours of coma.

REPORT OF CASE

A white man, aged 26, had had pain in the upper right quadrant frequently since childhood, increasing in severity after January, 1922. The pain occurred usually five hours after meals, and was relieved by food. Roentgen-ray examination disclosed a shallow duodenal ulcer. Operation at 9 a. m., June 27, 1922, disclosed a stellate ulcer at the junction of the duodenum with the anterior surface of the pylorus. After a posterior gastro-enterostomy and appendectomy, the patient was returned to his room in good condition. One-fourth grain (0.016 gm.) of morphin sulphate was administered hypodermically. The nurse called the house physician to visit the patient at 2:45 p. m., as he was very much cyanosed and breathing hard, and I was promptly notified and visited the patient in company with Dr. J. N. Hall, when we found a typical morphin narcosis, the pupils contracted and the respirations slow. At 4:10 p. m. a hypodermic injection of atropin $\frac{1}{150}$ grain, was ordered. Alcohol was used by the nurse in preparation of the skin, and the injection was made in the outer aspect of the right thigh, the hypodermic syringe having been sterilized first by the sister in charge of the floor. At 8 p. m. the patient was very much improved, and complained of pain at the site of the abdominal incision; evidently, he was recovering from the morphin narcosis.

June 28, at 3 a. m., the nurse reported that the patient was very restless, with severe pain in the abdomen; and with the full knowledge of the effect of morphin on this patient, 1 grain of codein sulphate was administered hypodermically, which afforded relief for one hour. At 8 a. m., he complained of pain in the right thigh, and a hot water bottle was applied by the nurse. When I saw the patient at 8:30, there was a reddened area on the right thigh, about 2 inches in diameter, at the site of puncture by the hypodermic needle when the atropin was introduced on the preceding afternoon. Pressure provoked pain and ischemia, the color quickly returning on removal of the finger tip. There was no crepitation at this time, and it was assumed that we had a simple local hypodermic needle infection and the hot water bottle was continued. The patient was seen again at 11 a. m., the pain having increased in intensity, accompanied by swelling and redness, which extended from the hip to the knee. Crepitation was distinctly perceptible on palpation, and the temperature was 104 F. A diagnosis of gas bacillus infection at the site of the hypodermic puncture was at once made and a needle was introduced, withdrawing serum for microscopic examination, which proved negative.

At 11:30 a. m., consultation was held with Drs. J. N. Hall and Leonard Freeman, when it was decided to open the leg. A smear taken from the first incision gave numerous gas bacilli (*B. aerogenes-capsulatus*, Welch, 1891) which finding was later confirmed by our pathologists, Drs. Hillkowitz and Craig. Under local anesthesia, three long incisions were then made through the fascia lata, at 1 inch intervals, and copious applications of hydrogen peroxid were made, no fresh surgical solution of chlorinated soda (Dakin's solution) being available at that time, and amputation being out of the question. The dressings were saturated every ten minutes thereafter, but the patient grew steadily worse, blood appearing in the urine at 5 p. m., the pulse becoming weaker, and death occurring at 12 midnight after two hours of coma.

The remaining tablets of atropin sulphate and the hypodermic syringe and needle were at once submitted to careful laboratory tests by the pathologist, Dr. Helen Craig, anaerobic cultures being made, all of which failed to produce the organism. A possible clue to the source of this infection may be found in the history subsequently obtained from the wife, that the day prior to the patient's coming to the hospital he had spent a portion of the afternoon in cleaning the stable.

It is in such experiences as this that one regrets not having used the other method of sterilization of the skin. A generous spotting with iodin, given a few seconds to dry, makes the target for a well directed needle, the center of which should be approximated with certainty. The sterilizing efficacy of iodin is no doubt superior to alcohol, especially in view of the quality of the latter now so commonly found on the market.

Maintenance of Industrial Efficiency.—Periodical medical examination, whereby minor ailments may be recognized and treated, also the testing of men's physical fitness for work, after a few months or years of factory service, would, by the elimination of the unfit, tend to maintain industrial efficiency. Physical incapacity for work as revealed by such examination should not, however, be made the excuse for dismissal of the men, but the occasion for providing them with lighter employment.—T. Oliver, *J. State M.* **29**:322 (Nov.) 1921.

Clinical Notes, Suggestions, and New Instruments

INJURY TO CAROTID ARTERY AND JUGULAR VEIN, WITH LIGATION AND RECOVERY

C. S. LAWRENCE, M.D., WINSTON-SALEM, N. C.

A boy, aged 12 years, entered the hospital, Aug. 6, 1922, with a wound of the neck, due to an automobile accident. The impact of a collison threw the boy, who was riding on the front seat, into the wind-shield, breaking it and at the same time inflicting a wound in the left side of the neck. There was a sudden, profuse hemorrhage; the boy got out of the car and stood for a second; then his father and other occupants of the car laid him on a cushion and applied a handkerchief compress to the bleeding wound, placed the boy in the car, and drove to the hospital, a distance of 4 miles. On the way, they stopped at the office of a physician, who advised them to rush to the hospital at once.

I saw the boy within a few minutes after admission. He lay perfectly quiet, blanched from loss of blood; the pulse was soft and feeble; there was an incised wound in the left side of the neck, clean cut, with no bleeding. The boy held his head flexed on the neck, closing the wound. His clothing was soaked with blood, and his shoes were full of it. The other occupants of the car were sprinkled with blood.

The wound was so extensive that we decided to give the boy light ether anesthesia to repair it. Things were made ready, and Dr. Stirling started the anesthetic. As soon as the patient got enough ether to stimulate him he moved his head to the right, opening the wound, with a spurt of blood that was, indeed, alarming. I immediately applied a compress, holding it with my hand and controlling the hemorrhage. The wound was slowly opened. At the same time, pressure was made below until I could see the cut end of the internal jugular vein and a wound into the carotid artery. The jugular vein and the carotid artery were clamped with a curved Kelly clamp, transfixed, and ligated with No. 2 chromic catgut. When the clamp was released, blood was seen to flow from the carotid, so it was again ligated above and below the wound, after which there was no bleeding. The artery was cut about half through. The upper end of the jugular was found retracted high up under the cut ends of the neck muscles; it was clamped, transfixed, and ligated with No. 2 chromic catgut. The glass made its mark on the thyroid cartilage from front to back, and almost entered the larynx. The wound ranged from above down; hence the carotid was cut at a lower line than the jugular.

The muscles of the neck were approximated by No. 1 chromic catgut, and the skin was closed with silkworm gut. The boy left the table in a very feeble condition; 500 c.c. of salt solution with 500 c.c. of black coffee, given by rectum, with heat to the body, revived him at once, the pulse improved, and the general appearance improved markedly. Salt solution was given by rectum for twenty-four hours, when the condition was so much improved that the treatment was discontinued.

RECORD OF CONVALESCENCE

August 7, there was ptosis of the left eyelid; the left pupil was contracted, and reacted sluggishly to light. The voice was husky, the patient being able to speak only slightly above a whisper; 1,500 units of antitetanic serum was given. The face muscles were relaxed on the left side.

August 9, the left pupil was dilated with homatropin, and the eye ground examined. The nerve head was somewhat anemic, and the margins were not clearly defined. The vessels looked normal in every way. No abnormality was seen in the retina; there was a mild degree of ptosis of the left lid.

August 12, two silkworm stitches were removed. The margins of the wound separated, with discharge of pus. The patient could not speak above a whisper.

August 15, the eye grounds were normal.

August 21, aside from a slight discharge from the wound, the general condition was good. The left pupil was still smaller than the right. There was ptosis of the left lid, and relaxation of the muscles of the left side of the face. The voice was husky. The patient was discharged from the hospital to return for dressings.

October 17, fluoroscopic examination showed the excursion of the diaphragm equal on the two sides. The heart and the lungs appeared normal. The pupils reacted to light and accommodation. The left pupil was slightly smaller than the right. The drooping of the left lid and the relaxation of the face muscles were much improved. There was no improvement in the voice. Distinct pulsation was felt in the carotid artery below the point of ligation, with none above. There was a very feeble pulsation in the left temporal artery, demonstrable for the first time since injury. The boy was much improved in general health.

Jan. 29, 1923, five months after the injury, the general health was good. The left pupil was half the size of the right. The voice was husky. There was slight improvement in the voice and in the muscles of the face.

COMMENT

When the common carotid artery or internal jugular vein is divided or punctured, the time required for fatal bleeding is so short that few patients have been saved. Lejars and Larrey have shown, by reported cases, that the life of patients so injured can be saved. In their cases a surgeon happened to be close at hand when the accident happened, and controlled hemorrhage by compression until the vessels could be ligated.

In the case here reported, the patient was literally soaked in his own blood. In my opinion the reasons he did not bleed to death were that: (1) he bled until the blood pressure was nil; (2) the severed neck muscles retracted, taking with them the cut vessels, the bleeding vessels coming in contact with fresh cut muscle, which has a tendency to control hemorrhage; (3) a handkerchief compress was applied by a layman present at the time; (4) the flexed position in which the boy held his head on the neck to the injured side had a tendency to close the wound.

There is no doubt that the recurrent laryngeal nerve was severed at the time of the accident, for all I did was a rapid ligation of the vessels, and if the suture had included the nerve I do not believe it would have destroyed it. There were no symptoms of pneumogastric or phrenic injury. The contraction of the pupil on the side of injury was due, evidently, to sympathetic injury, and the partial paralysis of the face muscles was due to the same cause together with anemia.

NEW TECHNIC FOR THE FLOCCULATION TEST OF SYPHILIS

ARTHUR R. CASILLI, M.D., NEWARK, N. J.

The various modifications of the original Sachs-Georgi precipitation test of syphilis have dealt with the preparation of antigen, the technic used, or both. One thing has become evident, however, and that is the use of concentrated but freshly diluted antigen. Kahn's preparation of antigen and modification of technic used in performing the reaction have gone far to show that the flocculation test may eventually replace the difficult complement fixation procedure of Wassermann.

The technic I have evolved takes advantage of Kahn's antigen, but the reaction gives decided, clear flocculation results.

TECHNIC

The clear serum is inactivated at 56 C. for half an hour. One-tenth c.c. of serum is diluted with 0.9 c.c. of physiologic sodium chlorid solution (0.8 per cent.). At the bottom of a clean, dry, one-fourth by 4 inch test tube made of nonsoluble glass is put 0.05 c.c. of pure cholesterinized antigen (not diluted), and to this the 1 c.c. of diluted serum is added. The mixture is vigorously agitated and incubated at 37 C. Within three hours there will be a sharp, clear-cut flocculation in positive serums. I prefer to incubate over night and read the reaction in the morning when the precipitate all sinks to the bottom of the test tube, leaving a clear, supernatant fluid. The negative serums remain turbid, but with no flocculation.

While the cholesterin antigen gives the best results, the positive serums also react to noncholesterin antigen, but the reaction is less sharp. The stock antigen is always to be kept in the incubator.

For quantitative work, two test tubes are used. In each is put 0.05 c.c. of cholesterinized antigen. To the first tube is added 0.2 c.c. of serum previously diluted to 1 c.c. with saline solution; to the second tube is added 0.1 c.c. of serum previously diluted to 1 c.c. with saline solution. Both tubes are vigorously shaken and incubated at 37 C. Within three hours there will be distinct gross flocculation in both tubes, but more in the first tube if the serum is of four plus reaction. It is interesting to note that, in four plus reactions, the precipitation occurs in the first tube long before flocculation occurs in the second. With a flocculation of equal quantity in the two tubes, or with a fainter precipitation in the second tube, the reaction is read three plus. If there is complete flocculation in the first tube and none in the second, the reaction should be two plus. When the flocculation is only faint in the first tube and none in the second, the reaction is given one plus. Of course, with no flocculation in either tube the reaction is negative. These readings are based on my observation that 0.1 c.c. of serum is just enough to produce a complete flocculation in a four plus reaction. It is an advantage to be first acquainted with the degree of flocculation given by 0.1 c.c. of serum of a known four plus reaction.

RESULTS

I have tried this technic with a large number of serums, and for the present I can only say that the results thus attained are in perfect accord with the Wassermann reaction. My only reason for the publication of this preliminary note is to acquaint other investigators with the technic, which, if adopted, may be of service in their research and may give me no opportunity to compare their results with mine by the time I am ready to give a full account of the test.

111 Park Avenue.

AN UNEXPECTED EPINEPHRIN REACTION FOLLOWING INFILTRATION WITH PROCAIN-EPINEPHRIN SOLUTION AS A LOCAL ANESTHETIC

CHARLES E. DOWMAN, M.D., ATLANTA, GA.
Assistant Professor of Surgery, in Charge of Neurologic Surgery, Emory University School of Medicine

M. S., a woman, aged 31, was admitted to the Piedmont Sanatorium, Feb. 1, 1923, with a diagnosis of tumor of the cerebellum. Her symptoms had begun one year before, and consisted principally of dimness of vision, headaches, vomiting, and staggering gait. The general examination was negative for hyperthyroidism. The blood pressure was systolic, 100; diastolic, 70; the pulse was 80; hemoglobin, 70 per cent. The neurologic examination disclosed bilateral choking of the optic disks, a markedly staggering gait with tendency to lean to the right, and asynergia of the right arm and right leg. February 7, the patient was prepared for operation. The field of operation was infiltrated with 5 ounces of 1 per cent. procain solution, each ounce of the solution containing 7 minims of epinephrin chlorid solution (1:1,000). Before the infiltration was begun the systolic blood pressure was 102 mm. of mercury; the pulse, 80. At the completion of the infiltration, the systolic blood pressure rose suddenly to 180 and the pulse to 180 a minute. There was sudden loss of consciousness followed by a generalized convulsion. The extremities became blanched. The thyroid gland appeared increased in size. A few minutes later there was projectile vomiting. Fifteen minutes after the reaction began, the blood pressure began to fall, and came down within a few minutes to 115. As the blood pressure began to fall, consciousness returned. It was then noticed that the left pupil was dilated and that there was a paresis of the left side of the face. After two hours, these findings disappeared. During the twelve hours following the reaction, the patient vomited several times. At the end of this time the patient had returned to the same condition that preceded the infiltration. Two days later a cerebellar operation was successfully performed under ether anesthesia.

The use of local anesthesia in neurosurgical operations is a matter of routine with me except in children and very nervous adults whose cooperation cannot be relied on. The solution that we use contains from 0.5 to 1 per cent. of procain. To each ounce of the solution, 7 minims of epinephrin chlorid solution (1:1,000) is added. The epinephrin is used for three reasons: (1) to prevent the absorption of the procain; (2) to prolong the duration of anesthesia, and (3) to lessen the usual troublesome scalp hemorrhage. Although as much as 6 ounces of the solution has been frequently used, there have been no reactions which could be attributed either to the procain or to the epinephrin, with the exception of the case reported.

In view of the possibility of severe epinephrin reactions in the use of local anesthesia when this drug is added to the solution, it would seem advisable to determine beforehand whether or not the patient is particularly susceptible to epinephrin. This might be done with the Goetsch test. When several ounces of the solution are required, the epinephrin content should be correspondingly reduced.

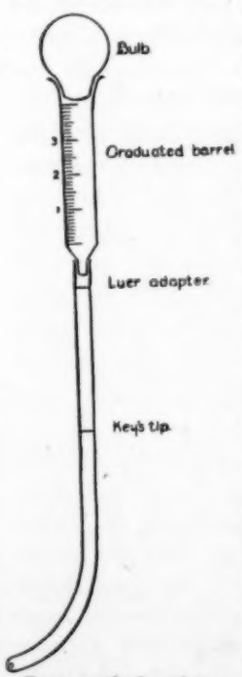
75 Forrest Avenue.

A DEEP URETHRAL SYRINGE

SIMPLE AND INEXPENSIVE ADAPTATION OF THE BULB TYPE*

H. J. SCHERCK, M.D., AND W. E. JOST, M.D., ST. LOUIS

From time to time efforts have been made to overcome the disadvantages of the ordinary type of leather-tipped piston syringe. The disadvantages are well known, especially on account of the difficulty of sterilizing and the impossibility of keeping the plunger continuously tight. Other suggestions have been made to overcome these objections, but we believe that in this idea all objections have been overcome, and that a most practical and simple adaptation has been made, as demonstrated in the accompanying illustration. The idea occurred to us on observing an illustrated advertisement relative to these types of syringe. One of the small syringes was graduated, and the tip adapted to a hypodermic needle of the Luer type.



Deep urethral syringe.

The advantages are as follows: that it is simple, inexpensive, and easy to sterilize; by removal of the bulb, the contents of the bladder can be evacuated, and should more than the usual amount of solution be required, the instrument can be filled any number of times without its being necessary to remove the tip. The only requirement for assembling the instrument is to use an adapter of the Luer type between the tip of the syringe and the metal Key's tip. These syringes are graduated and contain about 3.5 c.c.

849 Century Building.

*From the Urological Department, St. Louis University School of Medicine.

Problem of Malaria in Marines in Haiti.—Malaria was responsible for 16,986 days of illness in the First Brigade in Haiti in 1921. The average strength of the brigade was 2,115; the number of admissions was 2,056, with five deaths, hence almost every man and officer who served in Haiti during that year was infected. In the first six months of 1922, the number of admissions was 425, with three deaths, and 4,358 days of illness. Lieutenant-Commander Allen, M. C., U. S. Navy, in an address before the medical officers of Haiti, urged the necessity of an antimalaria campaign.

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SATURDAY, APRIL 14, 1923

THE THYMUS GLAND

As in so many other instances in which each of two conflicting interpretations of a phenomenon were eventually shown to be in part correct, so the early problem concerning the endocrines: Do they act by putting something into the blood (internal secretion) or by taking something out (detoxication)? is simmering down to the answer, "Both." The thyroid and pancreas yield extracts which seem able to replace completely the intact organs in the animal economy (excluding, of course, the digestive action of the pancreas) and may, therefore, be reckoned as functioning through a secretion. The extracts of suprarenal, pineal and hypophysis have definite actions, but have not yet been shown capable of subserving the functions of the intact gland, and judgment of the most salient action of these glands must be deferred. The parathyroids have never yielded active extracts, and have been recently identified with a detoxicating action.

An interesting light is shed on the whole problem by the elaborate studies of Hammar[1] on the thymus. This organ, as revealed by examination of the bodies of healthy persons accidentally killed, increases in size till puberty (from 11 to 15 years), and then slowly recedes with advancing age. The whole remains functional through life, as shown by its delicate response to varying body conditions and by the continued formation of lymph elements and Hassall's corpuscles. The thymus, it will be remembered, consists of two rather distinct tissues: the cells from the endoderm of the fourth gill cleft, which form the epithelioid core or medulla of the gland and are present with lymph tissue as the reticular cells in the cortex, and the lymphoid cells, which invade the gland early in its development. Hassall's corpuscles are being formed continually from the medullary reticular cells by hyperplasia of a small group of them, and are as continually reverting back to the normal reticular cells or, in the case of the larger corpuscles, undergoing cystic, hyaline, calcareous or other degeneration. The lymphatic tissues constantly produce lymphocytes which pass into the blood, as witnessed by numerous mitoses in the lymph "corpuscles," and an increased number of lymphocytes in the blood leaving the gland, as compared to the entering blood.

These two tissues, though related, are, Hammar believes, essentially individual in their function. Increase or decrease in Hassall's corpuscles and lymphatic tissues or corpuscles may occur independently, changes in the latter being usually merely part of a general change of lymphatic tissues. In age and inanition involution, the cortex is greatly reduced (the whole gland may decrease to a hundredth of the normal weight) by increased emigration and lessened production of lymph cells, while Hassall's corpuscles are slowly decreased because their continual formation is retarded while the steady regression continues. The roentgen ray may completely destroy the lymphoid cells and not modify Hassall's corpuscles. Acute infections are first associated with a marked decrease in the lymphoid cells and a great increase in the number of Hassall's corpuscles (in diphtheria, for instance, there may be ten times the normal number, new small ones being formed while the large ones degenerate); and later, when wasting sets in, with a decrease in both. Exophthalmic goiter is definitely accompanied by increase of both the thymic tissues, and the same follows the feeding of thyroid to animals. In cases of mors thymica (and in suicides) there is, if any significant change, a decrease in Hassall's corpuscles and increase in lymphoid cells. Wherever an increase or decrease of thymic lymphatic tissue appears, the same holds for the purely lymphatic tissue and the blood lymphocyte count, though to a lesser degree. The reverse does not always hold: the thymus is spared in some diseases of the lymph tissues proper.

Hammar concludes that Hassall's corpuscles and lymphoid cells are controlled separately by excitor and depressor factors, acting probably through the blood, and he reasons that the factors stimulating production of the corpuscles give the truest index to the unique functions of the gland. Any true antigenic toxin, as diphtheria toxin, snake venom or thyroid, when introduced into the body, leads to the formation of new Hassall's corpuscles, whereas nonantigenic poisons, as phosphorus, carbon monoxid or lye, are devoid of such effect. Hammar suggests that the thymus is essentially concerned with the production of antibodies, and that Hassall's corpuscles "form the morphological expression of an antitoxic activity." He notes that in inanition with lowered thymic activity the resistance to infection is less; that the increase of Hassall's corpuscles in diphtheria (a definite toxin) is especially marked; that, in response to a new intoxication, new corpuscles are formed while the old ones degenerate—possibly because new specific antibodies cannot be formed by the same elements which had produced

1. Hammar, J. A.: Endocrinology 5: 543 (Sept.), 731 (Dec.) 1921.

other antibodies; and that the lymphatic tissues in general are known to be concerned in immune processes. This somewhat speculative evidence is fortified with the results of Barbara,[2] who demonstrated that the thymus produces "stimulins," which activate the phagocytic cells, increase the opsonins, and either produce complement itself or incite its production in other organs.

The thymus, then, from this point of view, is not a gland of internal secretion in that it gives no substance *sui generis*. It is detoxicating in that it protects against toxins. This action is probably not, however, as in the liver, due to the direct action of the gland cells on the toxic bodies, but rather through the intermediacy of a cell product free in the blood stream, which one might choose to call an internal secretion as well as an immune body. Such a detoxicating secretory action may be the key to a number of endocrine antinomies. The futility of tissue extract therapy in "disorders" of such glands hardly requires mention.

THE THERAPY OF EXOPHTHALMIC GOITER

Exophthalmic goiter has long offered a problem of serious import to the clinician, since it causes much immediate distress to the patient and presents uncertainties of prognosis in most cases. Until recently, errors in diagnosis were frequent, for few clearly defined aids to clinical judgment were available. Now that there is more agreement in respect to the distinguishing characteristics of exophthalmic goiter, the therapy of the disease has become the subject of active discussion. In a recent issue of the *Archives of Internal Medicine*[3] is presented the outcome of serious researches by competent investigators which emphasize the conflicting points of view.

The crux of the situation involves the natural or spontaneous course of the disease. This is admittedly fundamental to any final evaluation of specific measures of treatment that may be undertaken. It is often alleged that the natural course of exophthalmic goiter is a most uneven one, and that improvements and relapses may occur at any time spontaneously. Means and Holmes of Boston have wisely remarked, however, that until some one produces a satisfactory experimental exophthalmic goiter, controls will be secured only by chance. Under such circumstances, therefore, it will not be easy to withhold promising treatment from patients, even if a considerable element of uncertainty as to its fundamental value may exist.

Recent treatment of exophthalmic goiter has for the most part proceeded on the theory that it really represents an aspect of hyperthyroidism. Means and Holmes remark that if we accept the theory that the symptoms manifested in hyperthyroidism are due to increased activity of the cells composing the thyroid gland, then the application of any method of treatment which is known to inhibit or destroy cell function would be rational. Surgery and roentgen-ray treatment have accordingly vied with each other for favor in bringing about the desired result. Rarely has it been possible to study such an array of carefully collected data as the intelligent collaboration of the internist, the surgeon and the roentgenologist has made possible in the study of a large number of patients at the Massachusetts General Hospital by Means and his collaborators. About two thirds of these cases exhibiting unmistakable exophthalmic goiter showed either recovery or improvement coincident with treatment by suitable irradiation with roentgen rays. The Boston clinicians assert that in exophthalmic goiter, when treated by the roentgen ray, if good results are not secured in a few months, surgery should be employed. Prolonged roentgen-ray treatment in patients showing no response is undesirable. They also believe that some patients with exophthalmic goiter who are not cured by the roentgen ray are, perhaps, made better operative risks by it. A combination of the two forms of treatment may sometimes accomplish more than either does alone.

In contrast with this is the report of the course of fifty cases of fully developed exophthalmic goiter observed at the Mount Sinai Hospital, New York, by Kessel, Hyman and Lande. The course of the illness was followed with as little interference with the natural tendency of the disease as was compatible with the comfort of the patient. At any rate, "specific" therapeutic procedures were not instituted. Such observations on patients kept essentially at rest alone may quite properly be regarded as a control investigation for comparison with the result attributed to irradiation and surgery. In the opinion of the New York clinicians, the spontaneous course of exophthalmic goiter is toward arrest in the vast majority of cases. In patients who develop the disease late in life (after 45 or 50) the prognosis is poor. If these cases are excepted, the prognosis is excellent under a regimen of "skilful neglect." To establish the efficacy of any specific therapeutic measure, we are told further, one should demand that definite proof be offered that the results obtained are better than those reported here of the "spontaneous" course of the disease.

All investigators now agree that until a specific diagnostic test is discovered, no reported case of exophthalmic goiter should be accepted as a genuine case unless the basal metabolism is distinctly and repeatedly elevated. According to the New York clinicians, by this alone can the disease be differentiated from "autonomic imbalance." In the stage of arrest, differentiation can be made only by the history of the crisis. The clinical picture varies as the age of the patient at the time of onset of the disease. In other words, the variation.

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2. Barbara: La fisiopatologia della tiroide e del timo nei rapporti colle infezioni, Milan, 1918, pp. 1-260.

3. Means, J. H., and Holmes, G. W.: Further Observations on the Roentgen-Ray Treatment of Toxic Goiter, Arch. Int. Med. **31**: 303 (March) 1923. Kessel, Leo; Lieb, C. C., and Hyman, H. T.: Studies of Exophthalmic Goiter and the Involuntary Nervous System: Kessel, Leo; Hyman, H. T., and Lande, Herman: III, A Study of Fifty Consecutive Cases of Exophthalmic Goiter, ibid. **31**: 433 (March) 1923.

especially in regard to the presence and extent of the exophthalmos, is dependent, we are told, on the end tissues of the patient, rather than on the specific elaboration of any toxic product. It may be well to reiterate here that thyroid hyperplasia and thyroid adenoma may exist for years without at any time causing sympathomimetic symptoms or alteration in metabolism. Kessel, Hyman and Lande insist that in exophthalmic goiter the dominant derangement is in the realm of the involuntary nervous system. This may not be primary; but the primary cause, whatever it is, must at least operate through the mediation of the involuntary nervous system. Means and Holmes point out, further, that, in toxic adenoma, roentgen-ray treatment appears to effect a similar improvement to that noted by them in exophthalmic goiter; but so far they have used irradiation only with patients who have refused operation. In toxic adenoma, in contrast to exophthalmic goiter, surgery probably removes the actual cause of the disease, the adenoma. The indication for surgery, they add, would, therefore, seem more definite than in exophthalmic goiter. Even in toxic adenoma, however, in certain cases that are too thyrotoxic for safe operation, the roentgen ray may be used to advantage. In the light of present-day evidence, the choice of therapeutic procedure presents, indeed, a difficult perplexity.

A RAPIDLY ELIMINATED DIGITALIS BODY

That the action of digitalis persists after the drug has been withdrawn was recognized by Withering in 1785. In recent years, Bastedo determined the presence of digitalis heart block three and a half weeks after the administration of digitalis had been stopped. Cohn observed by means of electrocardiograms that, in relatively healthy hearts, delayed conduction always persisted for at least two days, and occasionally for two weeks, while Eggleston reported coupled beats from four to twelve days, heart block from three to six days, auricular fibrillation three days, and extrasystoles two days after withdrawal of the drug. Agassiz found, after the intravenous injection of strophanthin, that the heart rate present before treatment returned in about a week. The action of digitalis persists, therefore, for several days in most cases, and in exceptional cases for three weeks. It is evident that better control of the action of digitalis is desirable.[1]

Hatcher, at the request of the Council on Pharmacy and Chemistry of the American Medical Association, undertook to elaborate a digitalis preparation that would be stable, that would contain a definite amount of the readily absorbable principle, and that would be suitable, if possible, for intravenous administration. As a result of extensive experimentation he has isolated a digitalis body which behaves unlike any constituent of digitalis heretofore described. That the new substance has a true digitalis action has been shown by tests on the frog's heart, and by its quantitative synergistic action with ouabain. A nearly fatal dose of this substance is completely eliminated within a few hours after its intravenous injection into the cat, whereas a nearly fatal dose of digitoxin is not completely eliminated for several weeks. Hatcher obtained this rapidly eliminated fraction from digitalis leaf, from the tincture, and from other digitalis preparations by simple methods of extraction. Several chloroformic percolates of digitalis, but not all of them—which, *a priori,* might be expected to contain digitoxin mainly—consist almost wholly of the rapidly eliminated substance, apart from inert matter. This is remarkable in view of the fact that digitoxin is the only chloroform-soluble substance, other than digitalin, obtainable from digitalis.[2]

The rapidly eliminated digitalis body has been separated quantitatively from other digitalis principles, and prepared in a state of purity approaching that of commercial digitoxin. Its importance is due to the effect it will have on the dosage and the biologic standardization of digitalis. Its therapeutic value must be determined by further investigations in which the clinician and the pharmacologist work hand in hand.

The intravenous administration of digitalis is rarely necessary if digitalis is properly given by mouth. For rare cases, in which intravenous digitalis therapy may be indicated, it appears that Hatcher has prepared a product whose action is less persistent than other digitalis preparations now available, and which is simply and inexpensively prepared.

Current Comment

DANGER OF ARSENIC IN CLOTHING

Recently an active advertising campaign has been utilized to promote the use of a solution containing arsenic (equivalent to 0.05 per cent. arsenic pentoxid) as a larvicidal spray for clothing.[3] It is proposed to induce manufacturers of woolen garments to have their materials treated with the arsenic solution to protect the cloth against moth invasion; in turn, the retailer guarantees to the consumer that the fabric will remain moth free. In view of past experiences with arsenic poisoning and the almost universal legislation against its presence (except in minute traces) in foodstuffs, wall paper and even in dyed clothing, this propaganda is surprising. Even though only a small amount of arsenic in the form of the larvicide solution is directed for use as a moth preventive, it may be potent for harm, while carelessness in application may result in greater concentrations. When treated clothes are brushed, the arsenic compound may pollute the air

1. Robinson, G. C.: The Therapeutic Use of Digitalis, Medicine **1**: 122 (May) 1922.

2. Weiss and Hatcher: A Study of a Digitalis Body Which is Eliminated Rapidly After Its Intravenous Injection in the Cat, J. Am. Pharm. A. **12**: 26 (Jan.) 1923.

3. "Larvex," manufactured by the Process Chemicals Company, New York.

more than was the case with the now forbidden arsenic-bearing wall paper. Even the infant in arms may be poisoned by sucking treated woolens. Skin rashes, due to the close contact of treated underclothing, may become frequent, as happened years ago, from stockings colored with a dye carrying a small amount of inorganic arsenic as an impurity. Such contingencies should not be permitted. Unfortunately, the public is led to believe that the government endorses the product. The advertisements state that Larvex—as it is now called—was subjected by the U. S. Bureau of Entomology to the severest test possible and approved. An inquiry by THE JOURNAL reveals that the bureau does not endorse Larvex, nor were the tests the severest possible. It seems that a naval commandant requested the product to be examined and then turned the report—favorable as far as it went—over to the manufacturers, who capitalized it. Thus was one department imposed on by another government agency to the gain of financial interests; thus one arm of the government unwittingly served to defeat the spirit and purpose of legislatures in prohibiting the employment of arsenic in dangerous proportions in every-day commodities. Before it is too late, it is hoped that dealers in wool clothing will not allow themselves to be parties to the distribution of this potent poison, nor allow their names to be used in connection with a misleading endorsement.

POTENTIAL DANGERS IN CHEMICAL PRESERVATIVES

Several years ago, when the question of artificial preservatives, bleaching processes and colors in connection with food products was being actively agitated, Folin said that we need preserved foods now more than ever before. Therefore, he added, there is a legitimate and highly important field for the application of suitable chemicals (if such preservatives can be found) to food which would otherwise be wasted. Whatever the attitude of the individual may be toward the larger questions so long at issue here, there can certainly be no defense of alleged chemical preservatives which do not preserve. To employ such products means to proceed with false assurance. Yet this is apparently what is happening to those who use certain "canning compounds" now widely sold. The problem is one of large significance at the present time from the standpoint of the public health, for "canned goods" have become the object of inevitable suspicion, in view of the outbreaks of botulinus intoxication from preserved products. Levine [1] of the Iowa State College has found that one "compound," consisting of about 95 per cent. boric acid mixed with 5 per cent. of common salt, possessed a selective antiseptic action. Some varieties of colon bacilli and the spore-forming aerobic bacteria tested were inhibited, but the colon forms that have been associated with food poisoning (*B. enteritidis*, *B. paratyphosus* and *B. typhosus*) and the anaerobic spore formers (*Clostridium sporogenes* and *Clostridium botulinum*) grew, the latter readily, in the concentration of the compound which would be employed in canning. *Clostridium botulinum* grew in twice the concentration and survived three times the period of boiling recommended for canning with the compound. The bacteria normally present on asparagus, corn, carrots, string beans and green peas grew luxuriantly in the presence of the compound. A method which affords no adequate safeguard against food poisoning is a potentially dangerous one. Chemical preservatives do not exclude the need of eternal vigilance, even when they are sold in packages that glibly guarantee safety.

1. Levine, M.: The Value of Boric Acid Canning Compound in Food Preservation, J. Home Econom. **15**: 64 (Feb.) 1923.

CONDITIONS ATTENDING THE EXCRETION OF UREA

That the elimination of urea is one of the important functions of the organism requires little argument. It has become an established fact that urea is not confined to one or two organs in the body. This nitrogenous end-product of metabolism occurs in all tissues, except in fat and the urinary tract, in approximately uniform concentration. Its diffusion to all parts of the body is accomplished with great readiness. With this knowledge has come the realization that in health the excretion of urea is easily accomplished. In disease, however, the process of elimination is not always so favorable, so that retention may occur to a variable degree. If the normal process were well understood in all its details, a study of the situation in individual pathologic cases might reveal the character and extent of some defect in the excretory organs. On one side of the urea-secreting cells of the kidney there is blood, and on the other is the urine. Of late years, evidence has been increasing to show that the concentration of urea in the blood plays an important part in the speed of its transfer to the urine. Ambard and his associates conceived another factor to reside in the concentration of urea in the urine. Long ago, however, the studies of Marshall and Davis on animals showed that, when plenty of water is given, the rate of urea excretion is directly proportional to its concentration in the blood. This has now been verified for man, notably by the recent observations of Addis and Drury [1] at the Stanford University Medical School. In their experiments under conditions in which an abundance of water containing varying amounts of urea to alter the content in the blood was ingested, the proportionality between the amount of urea in an hour's urine and the amount in a unit of blood was constant within very narrow limits of variation, over a wide range of blood urea concentration. Such knowledge of the "laws" of urea excretion in health should lead to a useful technic in the detection of abnormalities of the eliminatory processes. It has long been appreciated that although the function of excreting urea may be much impaired in disease, a recognition of this fact simply from the output of urea is difficult or, at times, virtually impossible. The correlation of data derived from both blood and urine gives the greatest promise of furnishing helpful information and promoting an advance in diagnostic method.

1. Addis, Thomas, and Drury, D. R.: The Rate of Urea Excretion, V, The Effect of Changes in Blood Urea Concentration on the Rate of Urea Excretion, J. Biol. Chem. **55**: 105 (Feb.) 1923. Drury, D. R.: The Rate of Urea Excretion, VI, The Effect of Very High Blood Urea Concentrations on the Rate of Urea Excretion, ibid. **55**: 113 (Feb.) 1923.

Association News

THE SAN FRANCISCO SESSION

Postconvention Diagnostic Clinics

Thirty-five or more county medical societies in California will participate in diagnostic clinics, which are to be conducted throughout the state on Monday, July 2, and Tuesday, July 3. These clinics will be in all respects similar to those to be held in San Francisco and Oakland during the annual session of the American Medical Association (THE JOURNAL, Feb. 17, 1923, pp. 481-482). These clinics are to be held under the direct auspices of the county medical societies or by committees representing accredited hospitals. In some instances, the clinic program will be combined with a social program, all to constitute a well rounded day of review work and pleasure. It is hoped that, through these diagnostic clinics, physicians may get new and helpful ideas of diagnosis, treatment and renewed enthusiasm for their work, and that the public may gain information and fuller appreciation of the efforts and accomplishments of scientific medicine.

Representatives of various county societies and hospitals in California will be in San Francisco during the annual session to offer postconvention hospitality to visiting Fellows and to help arrange their postconvention itineraries. Some of the smaller county societies have combined to hold diagnostic clinics, while others that cannot provide facilities for clinics have created hospitality committees to assist visiting Fellows in arranging vacation trips.

The Los Angeles County Medical Society has appointed a committee to arrange the clinic program in Los Angeles, Monday and Tuesday, July 2 and 3. These clinics will be held in the Los Angeles County Hospital, White Memorial Hospital, St. Vincent's Hospital, Good Samaritan Hospital, Children's Hospital, California Lutheran Hospital, Methodist Hospital, Seaside Hospital and Pasadena General Hospital.

The San Diego County Medical Society, in cooperation with accredited hospitals and the United States Naval Hospital, has arranged for clinics at the United States Naval Hospital, St. Joseph's Hospital and the San Diego County Hospital. At the United States Naval Hospital, specially prepared clinics on tropical medicine will be held, offering a unique opportunity to physicians to see many rare diseases.

Societies of the following counties, singly or in cooperative groups, will conduct clinics and entertain visiting Fellows: Butte, Contra Costa, Fresno, Glenn, Humboldt, Imperial, Kern, Lassen-Plumas, Madera, Marin, Mendocino, Merced, Monterey, Napa, Orange, Placer, Riverside, Sacramento, San Benito, San Bernardino, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Shasta, Siskiyou, Solano, Sonoma, Stanislaus, Tehama, Tulare, Tuolumne, Ventura, Yolo and Yuba-Sutter.

The postconvention diagnostic clinic program outlined offers splendid opportunity for utilizing the experience of many of the teachers and clinicians among the Fellows of the American Medical Association. Dr. W. E. Musgrave, chairman of the Local Committee of Arrangements, 806 Balboa Building, San Francisco, will be glad to provide additional information about the postconvention clinics.

From San Francisco to Hawaii

The members and Fellows of the American Medical Association who wish to go to Hawaii from San Francisco can leave that city on the S. S. *Wilhelmina*, July 3, returning to San Francisco, July 25, or on the S. S. *Matsonia*, July 11, returning to San Francisco, July 31. Those sailing on either of these two vessels will have eight days in Hawaii. The approximate cost of the trip, including first class steamship accommodations, side trip to Hilo, scenic railroad trip along coast of Hawaii, a visit to Kilauea Volcano, automobile trip to Puna District and return to Honolulu and hotel accommodations at Volcano House and at Moana Hotel in Honolulu, will be $365. Those who wish to remain longer in Hawaii may sail on the S. S. *Wilhelmina*, July 3, and return on the S. S. *Matsonia*, July 31. Thus sixteen days will be allowed in Hawaii. The cost of this trip will be approximately $400. Any who wish to have further information may communicate with the Matson Navigation Company, 120 Market Street, San Francisco.

Michigan "Golf Special" to San Francisco

Dr. F. C. Warnshuis, secretary of the Michigan State Medical Society, informs THE JOURNAL that about fifty reservations have already been made on the Michigan "Golf Special," which will be operated from Chicago to San Francisco for the benefit of members of the Michigan State Medical Society and their friends who will attend the annual session. Reservations have been made from seven states. This special train will leave Chicago at 8 p. m., June 17, and will arrive in San Francisco on the morning of June 23. Stops will be made each day at places where good golf courses are available. Reservations have been made and arrangements have been completed for transportation to and from the golf courses. The cost to those who go on the Michigan "Golf Special" for railroad fare, Pullman, meals and incidentals will be $235. Requests for reservations should be sent to Dr. F. C. Warnshuis, Powers Theater Building, Grand Rapids, Mich.

To Delegates and Alternate Delegates

Credentials will be given all delegates to the American Medical Association, signed by the presidents and secretaries of their respective state medical associations. In cases in which delegates cannot attend the annual session, their credential cards should be assigned to their respective alternates. These cards are arranged conveniently for this purpose, the authorization for the alternate delegate being printed on the reverse of the card. It is to be hoped that every delegate who has been elected or who will be elected to represent his constituent state association at the annual session will be present on that occasion, or that in the event that any delegate cannot attend, he will notify his alternate delegate and provide him with proper authorization.

Invitation from Salt Lake County Medical Society

The Salt Lake County Medical Society is arranging for the entertainment of visitors who may be able to stop over en route, either going to or coming from San Francisco. The stop over here can be made inexpensive. Our society has already appointed committees to greet and assist in making arrangements to see the city and, if possible, some of the surrounding territory, which may include wonderful mountain drives; a visit to Saltair, which is situated on Great Salt Lake, and a visit to the great copper mines in this vicinity.

Large parties intending to make this stop over are requested to give us notice as far in advance as possible as to the number in party and length of time of stop over. Any inquiries relative to this matter may be directed to the secretary, Dr. Floyd F. Hatch, Deseret Bank Building, Salt Lake City, Utah.

THE SCIENTIFIC EXHIBIT

The Committee on Scientific Exhibit calls attention to the fact that applications for exhibit space or for time on the motion picture theater program must be in the hands of the director of the Scientific Exhibit not later than May 1. Judging by the applications thus far received, the exhibit at San Francisco will be of a high order. The exhibit constitutes an avenue through which research workers and practitioners may present visually and orally the results of their scientific endeavors. Efforts are also being made to coordinate the work of the sections with the exhibit. Each speaker before a section has received a letter from the secretary of the section suggesting that the features of his paper may lend themselves to effective visualization. In order that the available space may be apportioned to the best advantage, applications will not be passed on, nor assignments made by the committee until after May 1.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

(Continued from page 1011)

TUESDAY, MARCH 6—AFTERNOON

HOSPITAL SERVICE

DR. FRANK BILLINGS, President of the American Conference on Hospital Service, in the Chair

The Program on Hospital Service

DR. FRANK BILLINGS, Chicago: Two years ago, the conference took part for the first time in this annual congress, and through those who had charge of the congress I was given the responsibility of compiling a program on hospitals. Last year, those in authority made the American Conference on Hospital Service responsible for the program on hospital service hereafter. Last year the officers of the conference prepared a program on subjects that were entirely new; they felt that it was necessary because in many instances various subjects relating to hospitals were threshed out repeatedly without getting anywhere, so this year new subjects are presented that have not heretofore been discussed before the congress.

The Rôle of Nonmedical Clinical Assistants in Hospitals Without Interns

DRS. S. S. GOLDWATER and E. M. BLUESTONE, New York: The rôle of the nonmedical assistant in hospitals without interns is one which has not yet been thoroughly investigated or appraised. The subject may be considered by ascertaining the actual contribution that such assistants are making to hospital service by considering the manner in which and the extent to which their services may be utilized to advantage, and finally by inquiring into opportunities for the training of such assistants, and the logical content of a course of training to fit nonmedical aids for fruitful hospital service. It is encouraging to know that the American Conference on Hospital Service has taken official cognizance of this problem.

The activities of nonmedical clinical assistants have a twofold origin: the fact that many hospitals that desire interns are unable to secure them, and the fact that hospitals that employ interns have in some instances deemed it wise to relieve their interns of time-honored and arduous, but relatively simple, duties. The shortage of interns has become chronic. In 1920, out of 6,440 hospitals that were requested by the American Medical Association to express an opinion on the subject of interns, only 1,126 reported that they desired to have interns, and of this number only 593, or approximately one half, were found in condition to furnish satisfactory internships. Roughly speaking, about 10 per cent. of the hospitals in the United States having more than ten beds each are able to offer satisfactory internships, and these hospitals, which represent approximately 50 per cent. of the total hospital bed capacity of the United States, are in a position to absorb all the graduating medical students, thus leaving unsupplied with interns 50 per cent. of all hospital beds.

Hospitals accustomed to the services of interns experience acute distress when deprived of such services. The sudden withdrawal of interns from hospitals during the war started something like a panic. Hospitals were unwilling to do without a system which they had come to regard as indispensable, and, in their eagerness to keep their organizations intact, began to offer financial rewards for interns. In hundreds of hospitals the unsalaried intern was replaced by the salaried intern, but although by this means a small number of older physicians were induced to abandon private practice and resume institutional work, the general hospital situation was not greatly altered, for the principal effect of the bidding up of salaries was the mere fruitless shifting of interns from one hospital to another. The cessation of the war brought no adequate relief. The number of hospital beds, and, more especially, the demand for intensive technical service incidental to diagnosis and to the treatment of hospital patients, continue to increase at a rate which indicates a continued shortage of interns; and this is a condition which cannot be disregarded, since it is now generally believed that hospitals which are deprived of interns are more than likely to be frustrated in any attempt at the proper organization and standardization of their clinical work.

Clinical records are important in all hospitals, both great and small, but it is futile to talk about perfecting the clinical records of small hospitals unless a substitute for the intern can be provided. With the best will in the world, the visiting staff of hospitals that have no interns cannot see patients promptly enough after admission; they cannot take proper histories, satisfactorily record operations, furnish or secure adequate and timely assistance at major surgical operations, render prompt first aid in minor accident cases, make adequate clinical notes of the progress of their cases, make sufficiently frequent urinary analyses and blood examinations, or give suitable attention to infected wounds which require time-consuming treatment. For all of this work resident assistants are needed, and for some of it nonmedical aids are already extensively employed.

It would be folly to enlist the services of a nonmedical personnel to satisfy a need that is fundamentally a medical need, if any other expedient were available. Apparently, no other expedient will entirely meet the situation. The growing enrolment of medical undergraduates offers some, but not sufficient relief; for, as the number of medical graduates increases, so also does the ratio of interns to patients in well organized hospitals. Here and there, visiting physicians in attendance at small hospitals assert that in the absence of interns the visiting staff assume the interns' duties. If the larger hospitals which employ interns exclusively could be persuaded to employ mixed forces of interns and nonmedical technicians, a considerable number of interns might thus be released for service in the smaller hospitals. But who will persuade the larger hospitals to do this? Not a few of the larger hospitals are employing nonmedical anesthetists, surgical assistants, laboratory workers, and clinical secretaries, but the ratio of interns to patients is usually greatest precisely in those hospitals in which these extra workers are employed. In these hospitals, the chief purpose of the employment of nonmedical clinical aids is to relieve rapidly changing and relatively unskilled interns of the duties which they perform least satisfactorily, and to substitute workers who, through long continued practice, eventually acquire a high degree of technical proficiency. The relatively extensive employment of nonmedical persons in the most progressive and scientifically productive hospitals suggests that progress in medical science is dependent in a measure on efficient, nonprofessional aid in the performance of work which does not necessarily require medical training and judgment.

The inauguration of a comprehensive course of training for nonmedical clinical aids was first publicly suggested by us about three years ago. Many women had previously been intensively trained as either anesthetists, surgical assistants or laboratory workers; but women with this special training are not qualified for the broader and more varied work of clinical aids. Moreover, most of the women who have taken this special training have been rapidly absorbed by the larger hospitals as helpers to the intern staff, and have therefore failed to bring relief to the smaller institutions that have no interns to be relieved or helped out in this way.

In a typical medical or surgical service, the duties of the house staff begin, on the arrival of the patient, with the taking of the history. The time devoted to history taking is dependent on many factors. The patient may be an adult or a child; may or may not be intelligent in his replies; may require an interpreter, or may be stuporous or unconscious, in which case it may be necessary to obtain the history from a friend or a relative. The clinical condition may call for a simple history, or it may require painstaking historical research. Histories must be taken at all hours, and often in bunches. The time for taking histories is lessened where clerical help is available. Although the visiting staff does not read lengthy histories conscientiously, but, as a basis for its clinical judgments, contents itself with a series

of rapid fire questions addressed to the patient, it is commonly considered good practice for the intern to write histories, and the importance of complete records cannot be gainsaid. In studying the time factor in taking histories, we must remember the importance of searching for and abstracting old charts in the case of patients who were previously admitted. The average time for taking a history in a general hospital is half an hour or, in a 100 bed service, having an average of forty admissions a week, three hours a day.

Laboratory procedures may be considered as those done by laboratory experts, and those done by interns or laboratory technicians. In the former group are included the more difficult bacteriologic and pathologic examinations; in the latter, routine clinical pathology. Routine clinical pathology is usually assigned to the younger members of the house staff as part of their medical education. In Mount Sinai Hospital, one full-time technician for both surgical services, and another for the two medical services would be sufficient. As to general and special therapeutic measures, directions for treatment are necessarily given by the clinician; but the administration of drugs, and other forms of therapy, are carried out by nurses. Operative treatment belongs to the staff. Special therapeutic procedures, such as hydrotherapy, physical therapy and radiotherapy, are rarely assigned to members of the house staff. In Mount Sinai Hospital, the entire staff of each surgical service spends five hours daily in the operating room; but it is generally conceded that the second and third surgical assistants (interns in this case), the anesthetist, and the intern who passes instruments, might be replaced, perhaps with profit to the surgeon and the patient, by trained clinical aids. Other house staff duties are prescribed at Mount Sinai Hospital purely for the training of the interns. These include duties in the admitting room and in the pathologic laboratory. A large number of the duties of the house staff, fully one third, are extraclinical, such as obtaining necropsies, consulting with the relatives of patients, writing certificates and reports, and issuing notices.

DISCUSSION

DR. CHARLES P. EMERSON, Indianapolis: The county hospital is an expression of county pride. We have potentially ninety-two county hospitals in Indiana. If in Indiana we go to one of the counties and say, "You cannot support a hospital in your county," we arouse county pride. An appeal is made at once to the citizens of that county for the establishment of a hospital, and bonds will be issued. The more we discourage county hospitals, the more rapidly they will grow. Small hospitals are an expression of county pride, but in my opinion are menaces to the community. In this country, more than half of the patients are treated in hospitals with less than fifty beds which never have the advantages of interns. Of fifty hospitals in Indiana, we can persuade our seniors to go to but seven. They will not go to the smaller hospitals. They go more and more to the teaching hospitals unless they have a personal interest in a particular small hospital.

The reputation of a hospital depends on one man, whether it has twenty or fifty beds; it makes no difference, so long as it is run by a good man. A county hospital which is under lay organization deserves careful study. It encourages surgeons to operate in it who would not dare to operate in a larger institution. If a man operates on or treats a patient in such a hospital, the responsibility will not lean heavily on him but on the hospital. If a man has a private hospital, he will be held responsible for all that is done for patients; but when he sends a patient to a hospital for which he is not responsible, the hospital itself is responsible for his cases for which he shoulders no responsibility. In such hospitals, the danger to the patient is serious. Hospitals not responsible to one single man are not organized efficiently. Some of the larger hospitals are not efficient, but there is a minimal size below which a public hospital cannot be very efficient. A public hospital which is not under one man's personal direction has to have a staff covering the housekeeping side, the business side, the nursing side, the professional side, etc. You cannot have two persons on a full salary to do that. If you put in one of these small hospitals a woman who is trained as a clinical assistant, her time must be so spent about the administration and the housekeeping department of the hospital that she would have little time left for the professional care of patients. To maintain nonmedical clinical assistants in a twenty-five bed hospital, you would have to have a staff of three people at work, one each on the housekeeping, the business and the professional side, and the salary demands would be great. Therefore, from the standpoint of the safety of the patients, the problem is serious in these hospitals. If a physician sends a patient to one of these hospitals, he must do what he can and depend on the hospital to do the rest.

What good would an intern be in these small hospitals? Supposing, by some legal means, we could force eighty medical students to each be an intern in a separate county hospital: would it be to the advantage of the institution? Medical students will not go there, but want to go to the larger hospitals where they can work in place of the physicians. The value of interns to hospital organization will be in direct proportion to the supervision they receive. The physician who sends patients will not have the time to give the supervision and neither the housekeeper nor the business manager will be competent to do so. Hospitals under direct church organizations have firmly held that interns could act more efficiently for patients than those who are not trained in medicine. Three years ago I was asked to find out why so many interns left their jobs. I found that interns did not leave their jobs when a religious organization was holding them up to their lay point of view. These hospitals did not lose their interns. The interns naturally make business relationships with some physicians, and when openings present themselves they begin practice before their intern service is over. If we could send interns to these hospitals, it would be a great advantage to the hospitals and to the patients. Those who maintain these hospitals of less than 100 beds need a great deal of education. Interns go more and more to hospitals of more than 100 beds. Those interested in hospitals should know that these smaller hospitals are not necessarily assets to the community. It depends on who runs them. We must educate the public as well as the medical profession. You cannot open a hospital to all physicians in the county and give them equal rights. It will not work. The public should pick out a surgeon and a medical man who can be held personally responsible for the patients in that hospital, no matter whose patients they are.

DR. N. P. COLWELL, Chicago: In 1912, at the time the Council on Medical Education and Hospitals was thinking about putting into effect a year of hospital internship, or considering making that a requirement, an investigation showed that there were not enough hospitals to provide internships for the students then graduating, which was in the neighborhood of 5,000. But since that time, the number of hospitals has so greatly increased that the situation has been reversed. At present it has been found necessary to list only those hospitals which can furnish a satisfactory training for interns. These are general hospitals of 100 or more beds which have a rotating service. No hospital can establish a proper rotating service if it has less than 100 beds.

The problem that Dr. Goldwater speaks of is most acute in hospitals of less than 100 beds, and these hospitals care for a large number of patients. Dr. Goldwater referred to some hospitals offering salaries in an effort to get interns, but experience shows that medical students are not attracted nearly so much to those hospitals which are offering salaries of $50 or $100 a month as they are to those hospitals where it is known that excellent intern service is available.

The situation in regard to the number of graduates each year is not nearly as bad as it was a few years ago. The graduating class of last June represented the war class. The class which matriculated in 1918 was the smallest freshman class on record, and this class of 2,600 graduated in June. From the present enrolment of medical students in the classes which are to graduate in the next three years, there will be an increase of approximately 1,000 each year. The coming June there will be 3,000; in 1924 about 4,000 graduates, and in 1925 about 5,000. That increase will relieve the situation

in the hospitals of 100 beds or more, but it will not solve the problem of the smaller hospitals.

The investigation made of graduate medical education during the year shows another factor that enters into the problem. Some hospitals having large staffs of able men who can provide a higher grade of medical education are taking in as interns only those who have served a general internship elsewhere. The student would be assigned to a member of the hospital staff for future work as second assistant and later as first assistant and in that way preparing himself in some chosen specialty. Some hospitals are doing that with great advantage, both to the hospital and to the student. The Johns Hopkins Hospital is doing it now. They have their own interns, and from those interns they select those who are to serve a year as assistant residents and a second year as residents of the hospital. At the Mayo Foundation, every one who enters is required to have obtained a general internship elsewhere. They are assigned to the clinical department representing those chosen specially, and willingly serve for from three to five years. These educational hospitals could easily serve twice as many students if places for them were available. We are planning a separate list of the hospitals which are giving this advanced training for interns. It will include not only general hospitals, but also the special hospitals, such as eye, ear, nose and throat hospitals, and lying-in hospitals.

What is to be done for the large number of smaller hospitals is a problem we are still confronted with. Whether or not a nonmedical assistant can be trained to do the larger part of that work is a matter which should be studied closely and carefully before any definite decision is made about it.

DR. FRANK BILLINGS, Chicago: I am sorry no one has said a word for or against the nonmedical clinical assistant. I should like to have those who discuss the subject further consider that phase. Regarding the inefficiency of small hospitals, after all, it is the man behind the gun. One does not need to look with despair in this big country for want of efficient men in every community. They are bound to come to the front when the need arises. You know what Dr. Sampson did in Iowa in starting a community hospital, and I want him to tell you what he thinks of the nonmedical clinical assistant in such institutions.

DR. F. E. SAMPSON, Creston, Iowa: Dr. Emerson, in his remarks, touched on the matter of the small hospital. Whatever the institutional standards may be, the small hospital is here to stay. As to the nonmedical clinical assistant, there are many other factors to be considered before turning to nonmedical clinical assistants as hospital aids. The county hospital is one of the factors in Indiana, the same as in Iowa. We have a law which enables the people to vote bonds to build hospitals. If we can establish a minimum legal requirement for the county hospital and center that in the university hospital, we can not only settle the problem of the nonmedical clinical assistant, but also make the small hospitals places of opportunity for medical interns. I do not know very much about nonmedical clinical assistants in hospitals, but at Creston we could not get along with them and we train them ourselves. We have a nurse big enough to run a small hospital, and if we only had some place to train the type of superintendents we need for the increasing number of small hospitals, it would be the greatest service we could render in the development of the small hospital, and the nonmedical clinical assistant problem will settle itself.

DR. FRANK BILLINGS, Chicago: Students serving in hospitals as interns have complained to me that the methods are ultrascientific and not keeping pace with modern medicine; that staff members order a certain routine to be carried out with every patient, such as a blood examination, urinalysis or feces examination, and often that routine is kept up day after day. The purpose of an internship is to afford the medical student an opportunity to round out his medical education by daily clinical observations and laboratory work, and several licensing boards require that the physician coming up for examination shall have served the so-called fifth year in a hospital. In many teaching hospitals the routine work required of the intern is not educational. He does not have the opportunity or time which he should have to make clinical observations or the higher types of laboratory examinations, because he is engaged in this routine work, often unnecessary, and which has become a routine through the want of clinical judgment of the attending staff. Therefore, it was stated in the resolutions passed by the conference in Atlantic City, that nonmedical clinical assistants would be available as aids to interns in hospitals. That side of the question was not taken up by Dr. Goldwater, because his paper dealt with the need of nonmedical clinical assistants in small hospitals. The original resolutions passed at the conference in Atlantic City made reference not only to a nonmedical clinical assistant but also to a nonmedical anesthetist. Mention of the latter was omitted from the booklet, copies of which have been passed around, because there is a law on the statute books of Canada that no nonmedical individual can give anesthetics. In this country also that question has been discussed by the National Association of Anesthetists, which does not believe that any nonmedical individual should give anesthetics. It is a controversial question, and therefore it is omitted. The question comes up as to whether a national association like this, with its seventeen constituent organizations, should not take the initiative and attempt to supply qualified nonmedical individuals who may assist in the small hospitals. I hope you will state whether or not you think it wise to do so.

FATHER P. J. MAHAN, Chicago: The nonmedical anesthetist is already in existence and is quite generally used, indicating that there is a demand for and an appreciation of the help rendered. To a less extensive degree the surgical assistant is likewise existent, but I believe that there the need is not so great. When we come to the question of the record keeper and the clinical laboratory assistant, whence does the demand arise? Does it arise from the demands of the small hospitals, or in the minds of those who understand the need of accurate records in hospitals, and the need of thorough laboratory findings for the benefit of patients? That is an essential question, because if the small hospitals do not realize the need of this service, supposing you were to supply it, would they accept it? There are numbers of hospitals in the North Central states which have been supplied with record keepers, properly qualified, where every effort is made to supply stenographers for the physicians in order to get histories, and the histories cannot be obtained. The physicians resort to subterfuges of all kinds to avoid furnishing histories of their cases, and even when the histories have been written and the rest of the record taken, the physicians oftentimes do not look at them. In my own experience the demand does not arise from the hospitals, but from the medical men practicing in these hospitals. A large number of these men do not know what a good clinical record is, and the example by the older men has led the younger men to lose their interest in clinical records.

DR. I. D. METZGER, Pittsburgh: In 1914, it became the duty of the Pennsylvania board to make it worth while for medical students to enter hospital training, so we had to standardize the hospitals of Pennsylvania. While we demanded twenty-five beds for each intern, a hospital with less than 100 beds cannot rotate the interns satisfactorily throughout the whole service in which they should have experience. If a hospital with 100 or more beds has less than four interns, the interns must rotate throughout the service just as if there were four present, and the uncovered services must be cared for by the staff. We did not allow the rotating service to be set aside because there were less than the number of interns required. In 1916, the approval or disapproval of all hospitals of the state was placed in the hands of the medical bureau. Immediately we took the opportunity to standardize all hospitals, the small as well as the large. The first thing we did during those two years in which we had the power, because we lost the power at the end of that time, was to go over the state and examine all small hospitals. We found that very few of them had roentgen-ray departments; still fewer had laboratory departments. We immediately established these various departments in all hospitals.

It was obviously impossible for experts to give their entire time to these departments in small hospitals; therefore, we were compelled to place nonmedical assistants in the hos-

pitals. We call them technicians. We established pathologic laboratories, not as extensive as in larger hospitals, but laboratories in which all the essential investigations might be made, and placed in that laboratory as a pathologist a general practitioner of the community who had shown some special interest in that type of work. We required the hospital to place in the laboratory a trained technician who could take care of the details of the work and keep the materials in condition and make all tests required. These technicians eventually became strong and efficient people in the laboratories, so that a bill has been introduced in the legislature at Harrisburg providing for the licensing of technicians. They are establishing laboratories of their own and becoming professional people so that it becomes necessary to control them.

In the roentgen-ray department we also have a technician with an assistant trained to an extent that he can take pictures and do the rough work that might be necessary in emergencies and leave to the physician in charge the more technical work of the hospital. In anesthesia we have found that nonmedical people are by far the most expert anesthetists. That is their business, and the surgeon assumes the responsibility. We have nurses or sisters in various hospitals giving anesthetics, and we have no reason to regret it. The department of anesthesia is self-sustaining in all our hospitals. So are the laboratory departments. We must have persons to take care of the records who are not necessarily professional people. The whole story of efficiency in hospital work is told by the records.

DR. F. F. LAWRENCE, Columbus, Ohio: As Dr. Goldwater has told us, 80 per cent. of all hospitals are the smaller community hospitals which cannot provide services for interns, and practically all of these hospitals are unendowed. They are business corporations rather than charity organizations; hence they are legally responsible for every act of every individual in them. Then, added to that, they all have wide open staffs. Every physician in the community has a perfect right to use these hospitals. As there is no organization, there is absolutely no system. There can be no system without organization, and how much less system are we apt to have if we have untrained nonprofessional people as assistants, laboratory technicians, and so one, in and about a hospital? What will records amount to? The moral responsibility for the well-being of patients entrusted to the care of these people is much larger. I do not know how the question can be solved. I was wondering whether the modern movement which has abolished the system of a preceptor taking students in his office and training them has been for good, and whether it would not be a good thing to return to that system in our hospitals, requiring each hospital to have a fundamental working staff which is held responsible for the different departments of the hospital and which will take one or more junior or sophomore students to do the work that is done later by interns.

DR. A. R. WARNER, Chicago: Nearly every one has discussed this problem from some point of view in which he is particularly interested. The records represent a small part of the need of the hospital for nonmedical assistants. The letters that come to my office day in and day out deal with two things: First, "Where can I get an intern? We have not had one since the war, and we are badly needing one." Second, "Where can we get a nurse properly trained to do this or that work?" I can answer neither question satisfactorily. There is a demand from small hospitals which realize they cannot have interns. There is a demand for some one to do the work which the staff will not do for most of the patients. Other information was obtained by a questionnaire sent to about 3,000 people, asking how their roentgen-ray laboratory and anesthesia departments were getting the work done. All the smaller hospitals were suffering greatly in that they did not have sufficient professional service, but had other people doing this type of work. In regard to the roentgen-ray department, a large number stated that they had a full-time head of the department, although the hospital was under fifty beds, which meant that they had a full-time technician. The majority stated that pictures were taken by the superintendent or by the technician, meaning that they had no roentgen-ray professional head. Many explained that the plates were interpreted by the physicians, which meant that every general practitioner read plates taken by the technician. The hospitals cannot get professional work from the physicians. They cannot get histories written or get professional men to do the roentgen-ray or laboratory work, so they have done the next best thing, namely, get it done by properly trained technicians when they can get them; but they cannot get enough. Most of the hospitals say they train their own assistants. It is not a question of "what is best for patients," but of what we can do when hospitals cannot get adequate professional services.

DR. FRANK BILLINGS, Chicago: During my professional life I have witnessed a good deal of the advancement in medical practice, including the evolution of nursing and the increase in hospital organization, including the employment of interns. Forty-two years ago I was an intern at the Cook County Hospital when there was no training school for nurses. There were only six interns for more than 500 beds, and little demand for them then. Not more than 5 per cent. of the graduates obtained internships in that day. The authorities fought the organization of a training school for nurses, and I worked for five years before a training school was established in that hospital. In three of the main hospitals in which I have worked in Chicago, I had to organize laboratory services, the last one was twenty-four years ago. The changes occurring since then show that the world moves. The demand for nonmedical clinical assistants or technicians is not a new thing. Nonmedical technicians are employed in every university laboratory in this country. The innovation, is in having technicians trained to do clinical work, not as interns but as substitutes when interns cannot be obtained, and as aids to relieve interns of routine work.

The seventeen constituent national organizations that comprise the hospital conference should continue to exert their influence to improve hospitals, so that there will be better staff organizations, better records which are better filed and properly utilized, and improved laboratories and laboratory service. I hope that the hospital will grow beyond the mere purpose of furnishing efficient care for the sick and injured and be also an educational institution, since, as Father Mahan said, we of the medical profession need education as much as the public needs it. I agree with him fully in regard to the lack of interest on the part of professional staffs of hospitals in record making and in record keeping. As chairman of the record committee of a hospital, I had to use moral force and sometimes a little physical force, to make staff members furnish written histories; and even then some histories were not worth the paper they were written on.

DR. S. S. GOLDWATER, New York: The question was asked, What is the source of the demand for this service? Is it a demand because of hospital conditions, or is it a demand on the part of the hospital administrators to get the needed service which they recognize and are clamoring for? As a matter of fact, it is both.

Liability of the Hospital for the Acts of Its Servants

JOHN A. LAPP, Chicago: As to the relationship of the law of prudence to the management of hospitals, and the responsibility which they carry for the acts of their physicians, nurses and other assistants, there are three types of hospitals which need to be discussed separately, for in some institutions the responsibility depends on other considerations than pure negligence. Public institutions have slight liability for the acts of assistants, while private hospitals conducted for profit have very few exceptions from liability, and private benevolent or charitable institutions have a limited liability. The distinction among the three is very important.

Public institutions and hospitals created by the federal, state or local government are not liable for damages caused by negligence or incompetence of their officers or employees, unless that liability has been definitely fixed on them by the constitution of the state or by statutes, or unless that liability has been expressly accepted in the constitution or the law. A person may sue the individual or officer who is responsible for the negligence, but all that is necessary to do to offset the charge is to show that the officer or individual was acting within the law. If an officer cannot show statutory authority

to do certain things, he will be personally guilty of negligence and liable to the one injured. This rule makes the definite requirement on officers and employees that they act within the law. It does not offer relief to an injured person even at best, for it would be of doubtful value to sue an individual employee or petty officer, even though he may be directly chargeable with negligence.

The legislature may make and has made hospitals liable for injuries to their own employees under the workmen's compensation laws. In such cases all hospitals have the same liability as the industries of the state. Private hospitals for profit are subject to all the liabilities which similar enterprises are subject to, and charitable hospitals are made liable for negligence, but only when it is proved that they did not exercise due care in the selection of competent help.

Since the hospital for profit escapes none of the risk of negligence, and charitable hospitals have a large immunity, it is highly important that all institutions seek to come in the latter class—to look to their legal foundations.

Another class of institutions comprise the hospitals connected with medical schools. In such schools conducted by the state, the hospitals are exempt from liability, In hospitals connected with privately conducted schools, the same rules apply as in other hospitals. The whole question is one of the character of the parent institution—the medical school. If the medical school is organized for profit, or has any of the earmarks of a business corporation, the hospital which it conducts is not a charitable institution, whether it gives its work to charity or not. It has been held in several cases involving privately owned medical schools that such hospitals are conducted for the advantage of the school; and, the school being a profit making enterprise, the hospital cannot be exempt from liability.

The Kentucky Court of Appeals summed up the matter of the liability of a hospital owned by a private medical school as follows:

> It is manifest from the evidence that the hospital is maintained because it is necessary to the successful conduct of the school of medicine. Without the clinical instruction and the operations by the professors in the presence of the students, the school could not be maintained with success. The hospital is an adjunct and part of the medical school. Whatever gain may result from the operation of the medical school goes to the owners of the property. While the evidence shows a great deal of charity work is performed in the treatment of patients and in dispensing medicines, still the institution is conducted for profit.

In considering the charity hospital, quite a different rule applies. In a few states, notably Massachusetts, charity hospitals are entirely exempt from liability under present court decisions. No matter how much negligence may be chargeable to an employee, the hospital is not liable. In the case of a private physician treating a patient in such a hospital, the physician alone would be liable for negligence.

Should the hospital be liable for physicians whom it selects on a closed staff? Probably so, if the physicians on such staff are selected by the trustees, or with their approval. If a staff physician operates on a charity patient who is the patient of the hospital, then the hospital should be liable, unless such physician were chosen with due care. In the case of private patients brought to the hospital by a member of the staff, the liability should rest with the physician himself.

DISCUSSION

DR. A. R. WARNER, Chicago: There is no adequate or satisfactory amount of literature on this subject. It is growing as rapidly as any subject involving hospital administration, but there is great need for definite information on the subject. Two warnings to hospitals should be given due consideration by the trustees of hospitals as well as by staffs and administrators: First, to secure a maximum of protection by charter. I have known of several instances in which it was a desire of certain groups to retain control of hospitals which were known as charity institutions; but sharp questioning brought out the fact that they were business organizations. One of these was controlled by women physicians of the community. The second warning is the probability that court decisions in the near future will hold hospitals more closely responsible for the exercise of due care in their obligations to patients. Supreme court decisions may, indeed, be often settled temporarily by little points of evidence, but there is an unmistakable tendency on the part of the courts to assume more responsibility for protecting the public rather than the hospitals or the medical profession.

The best hospitals of the country are public service institutions and are doing good work for the public, some of whom can pay and others cannot. The term charity is out of date, and the hospital as a charity organization is quite out of date, and the courts are so interpreting them more and more. Trustees must keep in mind also that they can have 99 per cent. of the patients treated free if they wish, but the public will be protected by the courts whether that is 1 per cent. or 99 per cent.

There has developed a changed attitude and interpretation of the word "staff." Some years ago we could sharply define the word. For instance, this hospital had an organized staff, and that one did not. There was a time when we could sharply differentiate between the private patients of Dr. So and So and a case of the hospital. You cannot safely do it today. The so-called open community hospitals have learned so much about conventional duties and responsibilities of staffs that as far as they can they will hold the medical profession legally responsible for records and other things. The medical profession of the community, functioning as the staff of a hospital, carries corresponding responsibilities, so that the classification of institutions into staff and nonstaff institutions is no longer quite justfied because nonstaff institutions have a great many benefits that were in the past confined only to the staff institutions. I want to read an Ohio opinion which shows more than any other one thing the trend in court decisions: "Where a public charitable hospital has failed to exercise due and reasonable care in the selection of physicians, nurses or attendants, and injury results from the negligence of such persons, the hospital is liable." The only safe course for the trustees of any hospital to pursue is to recognize this tendency and use due and reasonable care in the selection of all agents, including all physicians who are permitted to bring patients or to practice on patients inside the institution.

The Relation of the State University Hospital to the Medical Profession

DR. C. P. HOWARD, Iowa City: This article will be published in full in THE JOURNAL.

DISCUSSION

DR. RAY LYMAN WILBUR, Stanford University, Calif.: This morning we were shown that the ideal plant was located on the state university campus with a close association between the medical school, hospitals and the university itself. A number of our state institutions have had certain difficulties in getting into a position of real leadership in the development of these institutions. Dr. Howard has indicated how Iowa has obtained that leadership.

One of the most serious problems is to get adequate clinical material on a university campus. That means some state law, some arrangement with state hospitals, and usually it must be brought about by common consent. There is such a scheme, I understand, at the University of Minnesota, where municipal hospitals are used by the state institutions; but often there is a struggle to obtain a university hospital so that there will be direct supervision by the institution.

The other problem, of whether members of the staff of a university conducting the medical school shall indulge in any form of private practice in the hospital and in the state, is an important one.

We have heard of the "full-time" or "whole-time" professor, and at the meeting of the Association of American Medical Colleges at Ann Arbor I objected to the use of these terms. I think the proper title should be academic professor. For generation after generation the academic professor has had certain privileges. He received a salary. If a professor of Greek wrote a book on Greek grammar and there were any royalties that came from the sale of the book, he got them. There is no legitimate reason, from the standpoint of university organization, why a professor of obstetrics or surgery on an academic basis should not receive compensation for services rendered outside the university in proportion to the

amount of service rendered, provided in such instances adequate work is done for the salary given. The same thing applies all along the line. Because of the type of organization and political relationship, there has been in some instances an attempt to corral the academic professor in the state medical schools inside the walls of the institution, not allowing him to engage in private practice, consultations, etc. This is entirely wrong. Every hospital medical school taking medical students must have teachers who deal with private patients. We must not have medical students trained simply by guinea-pig doctrines. The teachers must know the game of medicine. They must understand the problems of consultation in the communities in which they live and in which their students are going to live. It is not to the advantage of the medical student to have a teacher who can do things only when he has all the conveniences, necessities and assistants about him. He must know how to practice medicine if he is going to teach it. There must be a limit in all academic appointments and in the amount of private work done. These limits can be determined by the man himself. There should be adequate arrangements for him in the institution to do a limited amount of work. The right man will not abuse the privilege, and the wrong man can be removed.

We must not forget that in state institutions the problem of medical education is just the same. Medical students need just the same kind of training as our teachers need. The future of medicine will revolve largely around state-supported institutions, and we in the medical profession must be very broad in our conceptions of leadership in these institutions, and must get them in the right conditions for teaching rather than dealing with causes that seem to come into competition with us.

Dr. Irving S. Cutter, Omaha: In Nebraska, we have a somewhat different situation from that of Iowa, because our hospital is wholly charity. Therefore, we have no difficulty in getting clinical patients. We are not trying to educate the physician to send patients to the hospital, but we educate him to take care of his people. In 1917, after we had our hospital well going, we thought about the country practitioner. In 1919, we organized a summer course for practitioners which differs from the Iowa course considerably, in that emphasis was laid on clinical pathology and physical diagnosis, after considerable search as to what the country practitioner not only most needed but wanted. The program was filled from Monday morning of one week until Saturday night of the week following. The course was held in June. We have had from twenty to thirty men each summer, and we expect to hold it again this summer. The first year, twenty-two men came, and they represented graduates of twelve different schools, but they had not been inside of a modern hospital or laboratory for from twenty to thirty years. They were just the fellows we could help the most. Instead of confusing them by asking them how to read an electrocardiogram, we began with the A, B, C's of medical practice, and emphasized physical diagnosis. They heard a lecture on the chest, one on the heart, and then divided into small groups and were taken into the wards and shown cases. Many of them expressed a choice as to what service they wanted to work in. We taught them also to give intravenous medication—something which most of them had no conception of. That was of great value since these men were trying to give arsphenamin and could not do it. Little things like that have not only accomplished a lot for us but have helped the country practitioner. We have to have men to take care of the sick, and the more we can do to make them better men, the greater service we render. It is not the university hospital alone that can do this, but any teaching hospital can do it, and why should they not do so?

Dr. Charles R. Bardeen, Madison, Wis.: Dr. Howard has given a clear account of the splendid service rendered by the university hospital of Iowa. He has been able to base this account on long personal experience. Wisconsin is now erecting at the university a state general hospital. I am naturally interested in seeing it develop along lines of greatest usefulness to the public. Michigan and Iowa took the lead in developing state general hospitals on a broad scale. At both institutions the primary incentive in establishing these hospitals was doubtless the need of providing clinical material for medical students. It was soon discovered, however, that these hospitals met a public need quite apart from their value in medical education. They have come to be regarded as among the most beneficent institutions in the state, and have a popularity much wider than would be possible were their main function the somewhat abstract one of providing medical education. In Wisconsin, the public interest and support of the hospital now being erected are in the main due to a recognition of the value of a stitch in time. The new hospital, as in Iowa, will contain a psychopathic department in which earlier treatment can be given than is now the case in the hospitals for the insane; an orthopedic department in which early treatment can be given in case of inherited or acquired physical defects, and a pediatric department in which infants thrown on the public charge may receive proper medical attention. It will provide facilities for doing what is possible medically to aid the deaf and the blind who now receive merely custodial care. It will provide facilities for the care of patients suffering from various other medical and surgical conditions who are now without resources to obtain the proper care. The law covering these cases is similar to the laws of Michigan and Iowa, but is even broader.

(To be continued)

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Memorial Hospital Opened.—The Memorial Hospital, Brewton, was recently opened under the supervision of Drs. R. A. Smith and M. H. Hagood.

Australian Health Workers Visit Alabama.—Drs. A. H. Baldwin and F. McCallum of Melbourne, Australia, members of the commonwealth department of health, have been inspecting the activities that are being carried on by the local health units of Alabama for the prevention of malaria, hookworm and other diseases. Drs. Baldwin and McCallum have for the last six months been pursuing a public health course at Johns Hopkins School of Hygiene and Public Health, Baltimore, under the auspices of the International Health Board.

CALIFORNIA

Hydrophobia in California.—A large portion of San Bernardino County has been quarantined for rabies. More than 400 dogs in Berkeley have been vaccinated against rabies by the one injection method. All dogs that have not been vaccinated are taken to the pound.

Hospital News.—A campaign to raise $100,000 is being conducted in San Francisco, to build and equip a hospital, exclusively for Chinese patients.——The Woman's Maternity Hospital, Pasadena, was dedicated, with appropriate ceremonies, April 1. It is under the management of the Pasadena Settlement Association.——Dr. M. H. Rohland, U. S. Army, retired, will reopen the Hillcrest Hospital, located between San Jacinto and Hemet. The hospital was closed about one year ago.

COLORADO

University of Colorado.—Contracts totaling $1,237,988 have been let for the immediate construction of the University of Colorado School of Medicine and Hospital in Denver, it has been announced by the regents of the university. The hospital will be erected on a 20-acre field on Colorado Boulevard.

CONNECTICUT

Professor Mendel to Lecture in California.—Lafayette B. Mendel, professor of physiologic chemistry at Yale University, left New Haven, April 6, for the Pacific Coast, where he will lecture at the University of California on "Nutrition." Professor Mendel has leave of absence from Yale for the balance of the college year.

GEORGIA

Mental Hygiene Society Reorganized.—Reorganization of the Georgia Mental Hygiene Society was effected, March 8, at a meeting in Atlanta. Ex-Governor Dorsey was elected president, and Dr. E. Bates Block vice president. Dr. Victor V. Anderson of the National Mental Hygiene Committee stated there was a possibility of Atlanta's obtaining one of the Commonwealth Fund's demonstration clinics for a year. A committee headed by Dean Goodrich White of Emory University will look into the advisability of Atlanta's applying for one of the Commonwealth Fund's clinics.

ILLINOIS

Dr. Stilson Acquitted.—Dr. Jesse M. Stilson, Freeport, was acquitted by a jury, March 24, of a charge of murder, arising through the death of a patient following an illegal operation.

University Appropriation Bill.—The bill to appropriate $10,500,000 for the University of Illinois passed the house of representatives, Springfield, April 5, and was sent to the senate.

Chicago

Personal.—Dr. Clifford G. Grulee spoke on "Acute Hemorrhagic Nephritis in Children," and Dr. Herman L. Kretschmer on "Urology in Infants and Children," before the Medical Society of Milwaukee County, Wis., April 13.

Arrest Illegal Practitioner.—It is reported that Mrs. Emilie Ehlert, a self-styled spiritualist, was arrested, April 5, on a charge of practicing medicine without a license, by a member of the department of registration and education. Mrs. Ehlert, it is alleged, anointed her patients with a "mysterious" salve for $2.

Medical Library Donated to Rush.—At a meeting of the Society of Medical History of Chicago, April 6, a collection of books formerly the property of the late Dr. Edward Mease and presented by his son to Rush Medical College was exhibited. The collection, numbering nearly 300 volumes, ranging from the sixteenth to the eighteenth century, contains first editions of a great many of the famous medical books of that period.

IOWA

"Beauty Doctor" Sentenced.—According to reports "Dr." C. A. Furrey, a beauty specialist of Des Moines, convicted of obtaining money under false pretenses, was sentenced to serve seven years in the state penitentiary, March 31.

Southwestern Iowa Medical Society.—At the annual meeting held in Creston, March 29, the following officers were elected: president, Dr. William S. Reiley, Red Oak; vice president, Dr. Joseph W. Beauchamp, Bedford, and secretary, Dr. Jesse S. Coontz, Garden Grove.

Gifts to University Assured.—The passage of the bill providing for the granting of $2,500,000 by the state to the University of Iowa College of Medicine will enable the university to obtain two gifts of $1,125,000, each, one from the General Education Board and one from the Rockefeller Foundation, for the enlargement of the Perkins State Hospital and the university medical school. Construction work will start as soon as the necessary arrangements are completed.

KANSAS

Community Physician Appointed.—Two hundred families of Sharon have hired a community physician. Each family will pay $15 a year for necessary medical and surgical attention. Dr. E. S. Haworth, the appointee, says the plan thus far has worked well.

MARYLAND

Colony for Epileptics Under Construction.—Work on the buildings at the Springfield State Hospital, Sykesville, designed for the epileptic colony, has been commenced. The group, under a $200,000 appropriation from the legislature, comprises four buildings, which will accommodate 200 patients.

Psychiatric Clinic on Full-Time Basis.—Sufficient funds to place the Henry Phipps Psychiatric Clinic on a full-time basis are practically in hand, as all but $35,000 of a fund of $2,000,000 has been raised. This, it is confidently expected, will be raised before the end of the month, the time limit set by the anonymous donor who contributed $1,000,000 on condition that it be equaled within a specified time. In addition to the initial gift of $1,000,000, the Rockefeller General Education Board has contributed $750,000, and Mr. E. W. Harkness of the Standard Oil Company, $125,000. Other contributions have amounted to $90,000. With the exception of the psychiatric department in the University of Iowa, this will be the only department of psychiatry in a medical school on a full-time basis.

MASSACHUSETTS

Springfield Public Health Conference.—The Massachusetts Public Health Conference will be held in Springfield, April 26-28. Organizations participating are: Boston Association for the Prevention and Relief of Heart Disease, Massachusetts Association of Boards of Health, Massachusetts Association of Directors of Public Health Nursing Organizations, Massachusetts Association for Occupational Therapy, Massachusetts Committee of the American Society for the Control of Cancer, Massachusetts Dental Hygiene Council, Massachusetts Society for Mental Hygiene, Massachusetts Society for Social Hygiene, Massachusetts State Department of Health, Massachusetts State Nurses' Association, Massachusetts Parent-Teacher Association, Massachusetts Tuberculosis League, New England Division, American Red Cross, public health committee of the Massachusetts Medical Society and the public health committee of the Massachusetts State Federation of Women's Clubs.

MICHIGAN

Medical Society Sells Property.—The Wayne County Medical Society has sold its land and buildings for $110,000. The library of the society has been given to the Detroit Library Commission and will be moved to the Detroit College of Medicine and Surgery.

MINNESOTA

Epidemic of Lethargic Encephalitis.—Thirty cases of lethargic encephalitis with nineteen deaths have been reported to the Minneapolis Health Department since the end of February, it is stated by officials of the board.

MONTANA

Personal.—Dr. William A. Hulbush has been elected president of the Cascade County Medical Society to succeed Dr. Enoch M. Porter of Great Falls.——Dr. Howard W. Bateman, Choteau, has been appointed to the Montana State Board of Medical Examiners to fill the vacancy caused by the death of Patrick Henry McCarthy of Butte.——Dr. Byron L. Pampel, Livingston, has been appointed a member of the state board of health.

NEBRASKA

Personal.—A dinner was given to Dr. Irving S. Cutter, dean of the University of Nebraska College of Medicine, Omaha, at the Omaha Club, March 14, in honor of his recent election to the presidency of the Association of American Medical Colleges.——Dr. LeRoy Crummer, Omaha, delivered an illustrated address before the medical history section of the American College of Physicians, in Philadelphia, April 11. His subject was "Early Anatomical Fugitive Sheets."

NEW YORK

Governor Signs Davison Bill.—Governor Smith has signed the Davison bill, appropriating $1,500,000 for the construction of the Kings Park State Hospital for war veterans. This is part of the state hospitalization program advocated by the American Legion of New York.

Epidemic Encephalitis.—According to reports made to the division of communicable diseases of the state department of health, there were 308 cases of epidemic (lethargic) encephalitis in New York State during February of this year, more than in any one month during the last two years.

Diphtheria Prevention.—The state health commissioner, in compliance with a request of the public health council, has written to all physicians in the state to emphasize the importance of toxin-antitoxin. Several deaths from diphtheria have occurred due to the failure of physicians to use antitoxin. Four of seven members of one family died of diphtheria. The attending physician stated he "did not believe in toxin-antitoxin."

New York City

Academy of Medicine Drive.—It has been announced that $100,000 of the $250,000 fund for the erection of a new building at Park Avenue and Sixtieth Street has been contributed by 400 subscribers.

Medical Jurisprudence Society.—The New York Medical Jurisprudence Society held its annual banquet at the Hotel Brevoort, April 7. April 9, this organization held a joint meeting with the New York Roentgenological Society, at which Prof. L. P. Wilson of the College of Law of Cornell University delivered an address, on "The X-Ray in Court."

Hospital Centennial.—The New York Nursery and Child's Hospital passed its one hundredth year of service, April 1. The seventy-five thousandth infant born in the institution arrived on that day, and was elected to membership on the Honorary Centennial Committee comprising 100 physicians, government officials and laymen. The centennial celebration will be held, April 29.

NORTH CAROLINA

Summer Graduate Course on Internal Medicine.—A summer graduate medical course for physicians, to cover nearly all sections of the state not included last year, will be held by the extension division of the University of North Carolina, in cooperation with the medical school. Three circuits of six centers each will be organized, and each group of physicians will receive twelve lectures and clinical demonstrations. The courses will begin June 18 and end September 8. Internal medicine, with special emphasis on physical diagnosis, will be the subject of the lectures.

OHIO

Medical Building to Be Sold.—A bill, authorizing trustees of the old Ohio Medical University Building, Columbus, to sell the structure to White Cross Hospital, passed the house, March 28.

Nine Chiropractors Fined.—Municipal Judge Mahaffey, according to reports, March 31, assessed fines of $100 and costs, each, in the case of nine chiropractors, J. H. Farrand, C. A. Jorgensen, Thomas L. Young, Verne T. DeVille, W. H. Wooley, R. A. Martin, C. J. Rectenwald, Newton T. Miller and R. S. Graves, all of Columbus, charged with practicing medicine without a license.

Summit County Medical Society.—The Summit County Medical Society will organize a surgical and a medical section which, in addition to the regular monthly meeting of the society, will each hold a monthly meeting to discuss papers on its own work. President Corwin T. Hill has appointed Drs. John H. Weber and Roy H. McKay to organize the surgical section, and Drs. Joseph N. Weller and Horace E. Groom to organize for the medical section.

OREGON

Personal.—Drs. William Ross Eaton, Oregon City, and Dr. Donald H. Jessop, Portland, are suffering from epidemic (lethargic) encephalitis.——Dr. Ernest F. Tucker, head of the department of gynecology of the University of Oregon Medical School, Portland, since 1898, has resigned.

PENNSYLVANIA

The Jones Filled Milk Law.—The Jones Filled Milk Law becomes effective, June 19, and not May 20, as previously stated. The director of the state department of agriculture announces that all filled milk must be removed from wholesale stock and retail shelves before the date set for the final inspection. The new law means that no filled milks can be offered for sale in the state of Pennsylvania.

Philadelphia

Professors Resign.—Dr. Ruth Webster Lathrop, professor of physiology; Dr. Alice W. Tallant, professor of obstetrics; Dr. Esther M. Weyl, acting professor of pathology; Dr. Laura E. Hunt, professor of otology, and Dr. Frances C. Van Gasken, professor of clinical medicine, the Women's Medical College of Pennsylvania, Philadelphia, have resigned.

Hospital's Ninetieth Anniversary.—April 2, which was the ninetieth anniversary of the founding of the Wills Hospital, was "Donation Day" also. The hospital owes its existence to James Wills, Jr., who died in 1828, leaving it $108,390. The work of the institution has increased so that the original endowment is insufficient to meet expenses, and state aid has been necessary to keep the hospital open.

City Water and Typhoid.—Following the publication of statistics giving the typhoid records of Reading and Trenton for 1922, Dr. C. L. Furbush, director of the department of public health, stated that, because of the pollution menace, it had been necessary last year to use greater quantities of chlorin than ever before in the city's history. Philadelphia's death rate from typhoid fever in 1922 was only 2.7.

Personal.—Dr. Hubert Work, Secretary of the Interior, will address the Medical Club of Philadelphia, April 20.——Dr. J. B. Murphy of the Rockefeller Institute, New York, spoke on "Experimental Studies of Resistance to Cancer," before the Pathological Society of Philadelphia, April 12.——At the annual meeting of the Alumni Society of the University of Pennsylvania Medical Department, recently, Dr. Floyd E. Keene was elected president.

New York Obstetricians Visit Philadelphia.—By invitation, the fellows of the New York Obstetrical Society were the guests of the Obstetrical Society of Philadelphia. Clinics were held throughout the day. In the evening, following a dinner at the Adelphia Hotel, the New York members reported on clinics visited, and Dr. O. P. Humpstone of Brooklyn read a paper on "The Sociological Responsibility of Obstetrics and Gynecology."

TENNESSEE

Health Officers Convene.—The county health officers and their sanitary inspectors of the Tennessee Valley held a convention in Huntsville, Ala., March 30. This was the first meeting to be held by the Tennessee physicians and their assistants. A permanent organization that will hold monthly meetings will be effected. The chief subject of discussion was malaria control.

Maternity Bill Passes House.—The house of representatives at Nashville passed the maternity and infancy bill, March 15. Governor Peay has indicated he will sign the bill. Tennessee is one of a number of states which have accepted the provisions of the Sheppard-Towner Law and have qualified for the federal aid received under the statute. The state will pay $10,000 biennially, and will receive $15,540 from the federal government.

The Annual State Meeting.—At the ninetieth annual meeting of the Tennessee State Medical Association, held in Nashville, April 10-12, under the presidency of Dr. Holland M. Tigert, Nashville, the oration in surgery was delivered by Dr. E. Starr Judd, Rochester, Minn., and the oration in medicine by Dr. Marvin L. Graves, Galveston, Texas. Dr. Olin West, Chicago, spoke on "Medical Organization."

WISCONSIN

Optional Vaccination Bill.—The assembly, March 28, finally passed and sent to the senate a bill which makes vaccination for smallpox optional instead of compulsory. There was no opposition or debate.

PHILIPPINE ISLANDS

Legislative News.—The House of Representatives, January 18, passed a bill providing for the establishment of hospitals in the provinces and appropriating 500,000 pesos annually for this purpose.——A bill was recently introduced in the House of Representatives providing for the creation of a department of health.

Medicolegal Association Organized.—Under the auspices of Prof. Sixto de los Angeles, head of the department of legal medicine in the University of the Philippines, the Philippine Island Medicolegal Association has been organized. The secretary of justice was the guest of honor at the inaugural meeting, January 12, at which the subject for discussion was "Chiropractic."

Leprosy Research Board.—A board for the promotion and coordination of all work on leprosy in the Philippine Islands was recently created in Manila and approved by the governor general. Members of the board are: Major George R. Callender of the U. S. Army Medical Research Board, chairman; Dr. Jose P. Bantug, Philippine Health Service, secretary; Drs. Libozio Gomez y Pineda and I. Otto Schobl of the Bureau of Science, and Drs. Herbert W. Wade and Granville A. Perkins from the Culion Leper Colony.

CANADA

Health Officers Convention.—The annual meeting of the Ontario Health Officers' Association will be held at the University of Toronto, May 21-23. Dr. Henry F. Vaughan, health officer of Detroit, and Dr. Frederick G. Banting, Toronto, will give addresses.

Typhoid Epidemic.—The number of persons suffering from typhoid fever in the Cochrane, Ont., epidemic (THE JOURNAL, April 7, p. 1013) has now reached a total of 570, and the disease shows no sign of abating, it is stated. Twelve persons have died, and a lack of physicians and nurses is adding to the distress. The disease is spreading to other towns, Heart, Kapuskasin and Amos reporting cases. Amos alone has reported forty cases.

GENERAL

American College of Physicians Elects Officers.—At the annual meeting of the American College of Physicians in Philadelphia, April 6-7, the following officers were elected for the ensuing year: president, Dr. Harlow Brooks, New York; vice presidents, Drs. Jabez H. Elliot, Toronto, Canada, and Alfred S. Warthin, Ann Arbor, Mich.; treasurer, Dr. Clement R. Jones, Pittsburgh, and secretary, Dr. Frank Smithies, Chicago.

Dye Chemists Appointed.—The Secretary of Agriculture has appointed a committee of dye chemists to formulate plans of work for the color laboratory. The committee consists of R. Norris Shreve, secretary of the dye division of the American Chemical Society; Willard H. Watkins of the the National Aniline and Chemical Company, Buffalo; Louis A. Olney, president of the American Association of Textile Chemists and Colorists; William J. Hale, chairman of the dye division of the American Chemical Society, and Clarence G. Derick, Buffalo.

Scholarships Endowed by Congress on Internal Medicine.—The seventh annual clinical session of the American Congress on Internal Medicine, which opened in Philadelphia, April 2, announced the endowment of free scholarships to each of Philadelphia's five medical colleges for the best work in clinical research. The following officers were elected: president, Dr. Elsworth Smith, St. Louis; vice presidents, Drs. Edward J. G. Beardsley, Philadelphia, and William C. MacCarty, Rochester, Minn.; secretary general, Dr. Frank Smithies, Chicago, and treasurer, Dr. Clement R. Jones, Pittsburgh.

National Antinarcotic Conference.—Embassies of foreign governments, governors of states, medical, civic and welfare organizations, clubs, fraternities and societies, are invited to cooperate in a national antinarcotic conference, in Washington, D. C., May 3-4, for the elimination of the narcotic evil in the United States and other nations. An international dinner will be given the first day. A permanent committee will be appointed to confer with representatives of foreign governments, and to establish a definite plan to prevent the illegitimate manufacture, sale, distribution and use of narcotic drugs. Secretary of State Hughes will give an address at the dinner, May 3.

Bequests and Donations.—The following bequests and donations have recently been announced:

Springfield (Mass.) Hospital, $500,000; Springfield Home for Aged Women, Springfield Home for Aged Men, Hampden County Children's Aid Association, and the Massachusetts Society for the Prevention of Cruelty to Animals, each $10,000, by the will of Mrs. Martha S. Ludington.

University of Chicago, for sociological research, $21,000, and rare manuscripts valued at $9,000, by the alumni council.

Good Will Farm, Hermansville, Mich., $20,000, by Dr. George W. Earle, in memory of his son.

Charity Hospital, New Orleans, $10,000, by Joseph A. Breaux, former chief justice of the Louisiana Supreme Court, and $1,000 from "a friend."

Kurn Hattin Homes, Westminster, Vt., and the Sunset Home, St. Johnsbury, each $3,000; Brightlook Hospital, St. Johnsbury, and the Deaconess' Home, Barre, each $1,000, by the will of Mrs. Nancy Rollins.

Beth Israel Hospital, New York, $500, by the will of Mitchell B. Bernstein.

Beth Israel Hospital, New York, Jewish Maternity Hospital and the Hebrew Sanatorium, Rockaway, N. Y., each $500, under the will of the late Cecilia Rosett.

Long Island College Hospital Medical School, Brooklyn, $300, by Dr. Rufus E. Hagerthy, Sedgwick, Maine.

St. Michael's Clinic, Anniston, Ala., two beds, one endowed by W. W. Stringfellow in memory of Susie Parker Stringfellow, and the other by Henry J. Edmondson, as a memorial to his mother.

Disease in Other Countries.—The prevalence of disease in other countries is contrasted with that of the United States in the following statistics for 1922, given out by the U. S. Public Health Service:

In Russia, from January 1 to October 7, there occurred 83,367 cases of cholera; and from January to September, 369,125 cases of relapsing fever and 307,329 cases of typhus fever.

In October, there were 886 cases of typhus fever, with seventy-seven deaths, in the Union of South Africa.

The Island of Java reported 454 cases of plague, with 338 deaths in one month.

Bagdad, Mesopotamia, with a population of a quarter of a million, reported 153 deaths from smallpox in October.

Poland in one week had 291 cases of typhus fever and in one month 863 cases of dysentery, with 157 deaths.

From November 19 to December 2, the Madras Presidency, India, reported 700 cases of plague, with 449 deaths.

In less than a month, fifty-one deaths from smallpox were reported from Valparaiso, Chile.

The death rate for 1919, the latest for which comparative statistics are available, was for the United States, 12.9; England and Wales, 13.7; France, 19.1; Ireland, 17.6; Italy, 19.0; Spain, 23.3, and Sweden, 14.4. Australia and New Zealand had the lowest death rate, reporting 12.8 and 9.5, respectively.

Enforcing the Eighteenth Amendment.—Prohibition Commissioner Haynes has compiled the following statistics on federal arrests and seizures for violation of the National Prohibition Act for the six months ending Dec. 31, 1922:

	Six Months' Period Ending June 30, 1922	Six Months' Period Ending Dec. 31, 1922
Illicit distilleries seized and destroyed	3,838	4,781
Illicit distilleries seized and not destroyed	1,218	530
Illicit stills seized and destroyed	3,503	4,688
Illicit stills seized and not destroyed	2,470	2,492
Gallons of spirits seized and destroyed	68,538.03	92,221.78
Gallons of spirits seized and not destroyed	129,886.93	131,193.37
Gallons of malt liquor seized and destroyed	1,782,467.94	1,909,706.23
Gallons of malt liquor seized and not destroyed	37,259.37	459,443.71
Number of automobiles seized	1,362	2,211
Value of automobiles seized	$ 609,097.00	$1,100,100.85
Number of boats and launches seized	32	87
Value of boats and launches seized	$ 29,060.00	$ 777,150.00
Total appraised value of property seized and destroyed	$1,306,539.41	$1,663,326.97
Total appraised value of property seized and not destroyed	$1,479,312.27	$5,248,300.24
Number of agents killed on duty	2	12
Number of agents injured in performance of duty	16	33
Number of arrests	25,766	34,253

National Health Exposition Association.—The establishment of permanent headquarters for the National Health Exposition in Louisville, was recently announced. This association was formed by a group of state and city health officials to conduct health expositions along ethical lines and to eliminate promotional methods and profits from such enterprises. The organization will maintain a permanent staff and its personnel will be sent to various cities wherever required. Dr. George Parrish, Portland, Ore., is first vice president; Dr. Hiram M. Read, Seattle, second vice president, and Mr. Logsdon, secretary-treasurer. Members of the advisory council are: Drs. L. M. Powers, Los Angeles; H. L. Sayler, Des Moines, Iowa; F. W. Almond, Boise, Idaho; R. C. Turck, Jacksonville, Fla.; Thomas Tetreau, Portland, Maine; Rodney P. Fagen, Des Moines, Iowa; W. M. Dickie, Sacramento, Calif.; R. M. Olin, Lansing, Mich.; W. S. Rankin, Raleigh, N. C.; E. G. Williams, Richmond, Va.; S. J. Crumbine, Topeka, Kan.; J. D. Dowling, Birmingham, Ala.; Oscar Dowling, New Orleans; S. W. Welch, Montgomery, Ala.; C. C. Slemons, Grand Rapids, Mich.; W. S. Leathers, Jackson, Miss.; Charles Duncan, Concord, N. H.; I. H. Dillon, Lincoln, Neb.; W. C. Fowler, Washington, D. C.; Henry R. Vaughan, Detroit, and C. W. Garrison, Little Rock.

LATIN AMERICA

Dr. Forero Offers Another Prize.—Dr. Manuel Forero founded a prize some years ago in the Academia Nacional de Medicina at Bogotá. The income from it is awarded triennially for the best work received in competition, the Academia varying the topic. Forero has recently presented the *Repertorio de Medicina y Cirugía* of Bogotá with 200 pesos, to be presented to the author of the best work sent in for publication during the year by a Colombian writer. The presidents of the Academia and of the two medical societies form the jury of award.

New Pediatric Journal.—We have received the first two numbers of the *Revista Brasileira de Pediatria*, the official organ of the Brazilian Pediatric Society, of which Prof. Fernandes Figueira is president. The founder and director of the new journal is Dr. Alvaro Reis, of Rio de Janeiro. It is to be issued monthly in the interests of child welfare in general and in particular. The leading articles in the first number are "Diagnostic Importance of a Negative Response to Tuberculin Tests," by J. P. Garrahan; "Well Baby Clinics," by C. Ferreira, and "The Failure of Tuberculin Treatment," by E. Campos. The new journal makes a fine appearance and has a full abstract department.

FOREIGN

Hospital Inspection.—A party of British medical men, including several directors of London hospitals, are visiting hospitals in Basle, Berne and Zurich, Switzerland.

Pasteur Laboratory at Tientsin.—The new Pasteur laboratory in the French concession on the newly named Rue Pasteur, Tientsin, was formally opened in February, by the French consul. Dr. H. Y. King, director of the Peiyang Naval Medical School; Dr. Lassouarn, superintendent of the Pasteur laboratory; Dr. O'Neill and Dr. Lespinasse were among the resident physicians attending the ceremonies.

Distemper Investigation.—The medical research council of Great Britain has undertaken to organize an investigation of distemper in dogs. The investigation will be brought into relation with other studies in human and animal pathology. The following scientific advisory committee has been appointed to direct the work: Sir William B. Leishman, director of pathology at the War Office; J. B. Buxton, Capt. S. R. Douglas, Prof. F. Hobday and Dr. C. J. Martin.

Medical Education in Czechoslovakia.—A 1923 report from the U. S. Bureau of Education states that the Charles IV University of Prague, organized in 1348, is the largest university in the new republic. In 1920-1921, in its Czech and German departments, it had a teaching force of 256, including seventy-three teachers of medicine, and 8,078 students, including 2,520 in the department of medicine. In 1919, the T. G. Masaryk University, with a medical department, was established at Brno, and in the same year, the Komensky University at Bratislava was organized, with departments of law and medicine.

The Grassi Foundation.—The pupils and friends of Dr. B. Grassi, the malariologist of Rome, are collecting funds to endow a foundation in his honor for zoologic research on parasitic diseases. The occasion is the seventieth birthday of Professor and Senator Grassi, and the fortieth anniversary of his teaching. The address of the committee in charge of the fund is *Rivista di biologia*, via della Dogana Vecchia 27, Rome. Grassi received in 1920 the Mary Kingsley medal, given by the School of Tropical Medicine at Liverpool. His work on the exclusive transmission of malaria by mosquitoes was published in 1900.

The Aronson Prize.—The prize founded by the late Professor Aronson was awarded by the Berlin Hygiene Institute this year to Professor Doerr, director of the institute for experimental pathology and hygiene at Basle, for his works on the connection between the ultravisible and general biologic problems. In receiving the prize, he made an appeal for closer collaboration between the manufacturers of apparatus and experts in physics and chemistry. The institute at the same time gave a prize to C. Ruge for his works on streptococci, and to Vernbach for his research on the causal agent of influenza.

Deaths in Other Countries

Dr. **P. Morelli,** professor emeritus of surgery at the University of Naples and frequent contributor to surgical literature, aged 78.——Dr. **E. Pinzanni,** professor of obstetrics at the University of Pisa, aged 70.——Dr. **K. Arnd,** professor of surgery at the University of Bern.——Dr. **G. Bulius,** professor of gynecology at the University of Freiburg, aged 60.——Dr. **K. J. Schopper,** director of the state bacteriologic laboratory at Linz, formerly privatdozent at Vienna.——Dr. **Paul Devillers** of Paris, noted for having served as principal, second or physician in more than sixty duels.——Dr. **E. de Reynier,** who has practiced medicine at Neuchâtel for more than sixty years, aged 88.——Dr. **Adolfo Puebla,** member of the national legislature of Argentina and medicolegal authority, died at Buenos Aires, at an advanced age.——Dr. **José González Castro,** a well known Spanish medical writer.——Dr. **E. Salkowski,** professor emeritus of physiologic and pathologic chemistry at the University of Berlin, aged 78. His works on excretion of phenol and alkali salts, autodigestion of organs and the chemistry of the urine, and his tests are familiar in our textbooks.——Dr. **B. Scheube,** long professor at the University of Kioto, author of the popular manual "Diseases of Warm Countries," aged 71. He practiced at Greiz in Germany.

CORRECTION

Millimicrons Instead of Microns.—The word "microns" in the abstract "Bactericidal Action of Ultraviolet Light" (THE JOURNAL, March 10, 1923, p. 723) should have been "millimicrons" in both instances.

Government Services

U. S. Veterans' Bureau News

The U. S. Veterans' Bureau's preliminary course in the treatment of tuberculosis given at New Orleans (District No. 6) was concluded, March 31. Among the physicians of New Orleans who assisted in the course were: James M. Bamber, Henry Bayon, Charles W. Duval, Irving Hardesty, Adolph Henriques, Foster M. Johns and Professor Ashton.

Director F. D. Hines of the Veterans' Bureau has called a conference of district managers of the Bureau, to be held in Washington, April 23-25. Director Hines expects the district managers to make careful surveys of their respective organizations and to be prepared to discuss them in detail. Among other things, the director wants information as to whether or not a survey has been made to determine surplus medical personnel.

The Senate Committee charged with the investigation of waste and extravagance in the Veterans' Bureau will hold no public hearings for at least six or seven weeks. All members of the committee are absent from Washington, and from information available a quorum of the committee cannot be had for some time. Gen. J. F. O'Ryan, general counsel for the committee, is occupied in preliminary investigations.

Hospital Train Organized

Pursuant to instructions of the Secretary of War, the organization of a hospital train, organized reserves, to be known as Hospital Train No. 11 (a Pennsylvania state unit), has been authorized.

Second Physiotherapy Course

The next course of instruction in physiotherapy to be given at the Walter Reed General Hospital, Washington, will begin, Oct. 5, 1923, and continue four months. It is open to women who have had at least two years' training in an approved school of physical education. For information, apply to the commanding officer, Walter Reed General Hospital, Washington.

Report of Consultants on Hospitals for War Veterans

The group of consultants: Drs. W. C. White, J. C. Bowman, Frank Billings and Pierce Bailey (deceased), appointed by the Secretary of the Treasury in March, 1921, to consider the provision of additional hospital facilities for war veterans, has made its report. The consultants were assisted by an advisory committee consisting of Dr. Haven Emerson, representing the War Risk Insurance Bureau; Drs. C. H. Lavinder, W. L. Treadway and F. C. Smith, the U. S. Public Health Service; Col. C. M. Pearsall, the National Home for Disabled Volunteer Soldiers; Dr. T. W. Salmon, the National Committee for Mental Hygiene, and Dr. H. A. Pattison and Mr. T. B. Kidner, representing the National Tuberculosis Association. The Secretary of the Treasury gave instructions early in the work that all construction should be permanent and fireproof; that additions should be made to existing, permanent government hospitals when possible, and that when this was not possible construction should take place on property already owned by the government before the purchase of new property was undertaken. In gathering data, hearings were granted to more than 100 groups of persons interested in the location of hospitals in their particular districts, and officers who had personal knowledge of existing conditions were consulted. Fundamental principles to guide in the location of hospitals were established after due consideration was given to the distribution of the population, the existing government hospitals, accessory facilities, such as available state and civilian hospitals, the number and distribution of ex-service men, actuarial studies based on the expectation of sickness traceable to war service, railroad facilities, and the probable future economic use of buildings such as were to be provided. In view of the great delay necessary in constructing a complete hospital program, a preliminary report was submitted, which was approved by the Secretary of the Treasury, April 23, 1921. At the request of the Secretary of the Treasury, the President devoted a long session to the study of this problem, June 11, 1921, and approved the program submitted. The hospital plans were then submitted for criticism and advice to the chairman of various interested committees of the Senate and the House

of Representatives, each of whom gave his approval. The complete hospital program as eventually worked out, after several unavoidable delays due to pending legislation and the establishment of the Veterans' Bureau, comprises projects in nineteen cities, and the provision of 6,334 hospital beds. The average cost per bed from funds provided (Public Act No. 384) was $2,936, which includes allotments for everything—fixed equipment, personnel quarters, power, service, etc. An inspection of a number of the finished hospitals by members of the consultants' staff led to the conclusion that there is nothing better in the United States and probably in the world for the special care of disabled veterans suffering from tuberculosis and nervous and mental diseases.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 19, 1923.

The Census of London

The third volume of the census report of 1921, dealing with London, has been published. The total population enumerated as in the "administrative county" was 4,484,523. At the first census, taken in 1801, the population of the same area numbered 959,310. This number was doubled by 1841 and quadrupled by 1881, and reached the highest figure recorded, 4,536,267, in 1901. But the decline in the "administrative county" does not mean that the growth of London has been arrested. The present county boundary has long ceased to enclose, with any approach to completeness, the aggregation of districts which make up the metropolis. In what is known as "Greater London," the population reached in 1921, the highest figure recorded, 7,480,201, and is still increasing. The housing shortage, due to the war, is shown by these figures: The number of families for each occupied dwelling increased from 1.51 in 1911 to 1.59 in 1921. Analysis of the data on dwellings occupied by private families according to the number of rooms shows that 18.1 per cent. contained three rooms or less; 27.2 per cent. from four to five rooms; 42.3 per cent., from six to eight rooms, and 12.4 per cent., nine rooms or more. The average size of the family has fallen from 4.15 persons in 1911 to 3.79 in 1921, a drop of 9 per cent. This reduction will probably be explained by the returns from other parts of England. At the same time, the average unit of occupation for each family has decreased from 3.56 rooms for each family in 1911 to 3.38 in 1921, a decrease of only 5 per cent. The consequence is that the number of occupied rooms per person has improved from 0.88 to 0.91.

Disregarding differences in type of accommodation and size of rooms, the London population is the less densely housed by an average of one than in 1911. The average size of families in the several boroughs varies from 4.26 to 3.12, the largest being found in the poorest boroughs. With regard to birthplace and nationality, about 92 per cent. of the persons enumerated were born in England, about 3 per cent. in the remainder of the British isles, nearly 1 per cent. in the various dominions and colonies, and rather more than 3 per cent. in foreign countries, one fifth of the latter being British subjects either by birth or by naturalization.

"Safety First"

The sixth annual meeting of a very useful body called the "Safety First" Council has been held at the Mansion House. Its object is to call the attention of the public to the various ways in which the dangers due to vehicular traffic may be avoided. It operates by means of placards and by propaganda among schoolchildren. Speaking at the meeting, Lord Newton said that though we suffered from too large a population, nobody wished to reduce it by killing people in the streets. Last year no fewer than 675 persons were killed by vehicles in London, and more than 56,000 were injured, an increase of 16 per cent. on the figures of the preceding year. At present, there were two rules of the road—one for the pavement and the other for the road. On the former, the rule is keep to the right; on the latter, to the left. But in keeping to the right, the pedestrian in crossing the road is prone to step off the pavement in such a way that his back is to the vehicular traffic, and he runs the risk of injury. It has therefore been proposed to make the rule of the road, "Keep to the left," for both pavement and road. Then when the pedestrian wants to cross, he naturally turns round, as he is on the side of the pavement distant from the road; and he thus gives himself the opportunity of seeing any vehicle that may be passing. The question of "Keep to the left" has been considered by more than a hundred authorities, who with one exception have agreed to it.

Dangerous Drugs

As reported in previous letters, elaborate regulations have been made by the government to prevent persons addicted to drugs from obtaining them. One regulation was that physicians, dentists and veterinary surgeons, when prescribing "dangerous drugs," must sign their full names, including Christian names. This piece of "red tape" causes great inconvenience without any corresponding advantage. The government has therefore amended the regulation and now requires only the usual signature. On the other hand, a pharmacist shall dispense a prescription only (*a*) if he is acquainted with the prescriber's signature and has no reason to doubt the genuineness of the prescription, or (*b*) if he has taken reasonably sufficient steps to satisfy himself that the prescription is genuine.

The Calcutta School of Tropical Medicine

The Calcutta School of Tropical Medicine has adopted an important scheme of research, for which large monetary provision has been made by the government and also by private subscribers. A feature of the school is six special laboratories housed on the fourth floor, which was added by public subscription. The hospital, in addition to a large outpatient department, has ninety-eight beds, and it is hoped to add a special ward for female Indian patients. The students are all qualified and practicing physicians, with experience, in varying degree, with tropical diseases. There is a rigorous system of selection for admission of students, and classes are restricted in number to fifty. Special attention is paid to protozoology, of which Major R. Knowles of the Indian Medical Service is professor. The number of subjects dealt with in a six month's course considerably exceeds those for any other course of tropical medicine, and includes special clinical and laboratory instruction for six research workers on kala azar, leprosy, ancylostomiasis, diabetes, filariasis and the dysenteries. A high standard both in practical and in theoretical knowledge is maintained for the diploma of the school. The intention is to make the Calcutta D.F.M. not merely a medical diploma but an evidence of efficiency in tropical medicine, as the F.R.C.S. is in English surgery.

Dermatitis from Dyed Furs

On the continent of Europe, cases of dermatitis due to dyed furs have been recorded in the last year. The lower part of the face and the neck show an erythematous, lichenoid or eczematous eruption. The fur responsible, known by the trade name of "biberette," is probably rabbit's fur dyed to imitate beaver. The dye is paraphenyldiamin, which has been used for many years to dye fur brown. In England, some cases of dermatitis supposed to be caused by the dye on

cheap furs have recently been reported. The public health department of the London County Council has started an investigation, and a conference of representatives of the London Fur Traders' Association with the ministry of health has been arranged.

Bernard Shaw and the Profession

A favorite subject of Mr. Bernard Shaw's caustic wit is the medical profession. A vegetarian, antivivisectionist, antivaccinator and anti-almost everything, he can easily find topics. The Jenner centenary gave him the opportunity for the quip: "We should burn Jenner in effigy." Now he has, curiously enough, taken Sir Almroth Wright under his wing, but only for the purpose of disparaging previous workers. As Sir Almroth will not publish in the lay press because the proper place for his work is "the scientific journals," Shaw writes, in a letter to the *Nation and Athenaeum:* "What is a scientific journal? Is it a wadge of advertisements of every pill, potion, appliance, instrument and utensil that can be used in the bedroom of an invalid, with a few medical lectures in the middle to help the sales? Clearly not; that is a trade paper. Why does not Sir Almroth contribute to the *Times* supplements, the *Nation and Athenaeum*, the *Spectator*, the *New Statesman* or the *Saturday Review* and the rest of the sèrious weeklies? Dean Inge gives himself no airs of condescension when he contributes his weekly sermon." The reason, Shaw says that physicians will not write in the lay press is that their "trade union" would have them removed from the register. "Sir Almroth cannot say these things; his loyalty to his colleagues forbids him. Fortunately for the public, I can and do. I shall go ahead until the government purges the general medical council of its trade unionist doctors and makes it representative of contemporary science and the consumer, putting the doctors in their proper place as assessors only. Then it will be safe for Sir Almroth to explain his work to the public instead of having to depend on me." Ignoring the fact that the advances of science depend on the work of previous investigators, even when that work is improved on or supplanted, Shaw misrepresents it all as disastrous mistakes. Thus: "But there is not much vogue for reverence and gratitude in science. Copernicus and Galileo were grossly ungrateful to Ptolemy, and Einstein's irreverence for Newton has lacerated many sensibilities; so poor Jenner must take his turn, and Pasteur be reviled for a second-rate sciolist by young lions trained by Sir Almroth Wright himself. Even I, who have conferred on the world benefits less questionable than inoculating three generations of infants with cow syphilis, have my infallibility challenged quite often and most disrespectfully. *C'est comme cela que la Science marche.*"

Antivaccinationist Methods of Controversy

The Jenner Centenary has been made the occasion for the Anti-Vaccination League to issue a lengthy pamphlet entitled "An Inquiry into Vaccine Lymph: Its Origins, Varieties, Nature and Effects, with a Brief History of Its Compulsory Inoculation in England." The pamphlet is packed with statistics and quotations, and as a piece of special pleading will no doubt be effective with those ignorant of medical science. Dr. Hadwen, the protagonist of antivivisection, figures in the pamphlet. As an example of his methods and of the antivaccinators in general, the following is an example. The ministry of health issued a pamphlet showing the enormous decline of smallpox in Germany since the adoption of compulsory vaccination in 1874. The antivaccinationists asserted that this was a misrepresentation, as compulsory vaccination had existed in Prussia since 1835. They even put forward this contention in two questions in the House of Commons. The fact is that the regulations of 1835 provided only for compulsory vaccination in the event of an outbreak of smallpox in a house. Yet with his usual capacity for rhetoric and for disregard of fact, Dr. Hadwen, in the *Nation*, says: "The Compulsory Vaccination and Revaccination Acts of Prussia were passed in 1834 for the army and in 1835 for the civil population—the most tyrannical and brutal regulations ever framed by a civilized state—and at the end of thirty-five years of this despotism, Prussia was overwhelmed by the greatest scourge of smallpox on record." That the general vaccination of the population followed, and did not precede this epidemic, Dr. Hadwen takes care not to mention.

PARIS

(From Our Regular Correspondent)

March 16, 1923.

The International Confederation Against Venereal Disease

This confederation, which has just been founded under the chairmanship of Professor Bayet of Brussels and which has its headquarters at Paris, 7, rue Quentin-Bauchart, is the outgrowth of an agreement entered into between the Ligue des sociétés de la Croix-Rouge and the various national societies formed to combat venereal disease. Its purpose is: 1. To serve as a clearing house for all information concerning the world-wide campaign against venereal disease; to institute scientific and social inquiries on the incidence, prophylaxis and treatment of venereal disease in the different countries, and to publish an international bulletin of information. 2. To serve as a connecting link and a means of coordination between the various national societies that are combating venereal disease, national organizations such as the Red Cross, government organizations, etc., with a view to establishing uniform methods in the campaign against the venereal menace, together with exchange of experiences and comparison of results. 3. To facilitate the study of questions pertaining to venereal disease, from the international point of view; to insure the introduction of prophylactic measures to prevent the spread of venereal disease from one country to another; to favor the progress of national legislation, and to promote international agreement. 4. To assist pecuniarily scientific research in this field and to aid every society or national league whose program conforms with that of the international confederation; to found and support all model institutions for the study of all questions pertaining to venereal diseases as a whole. 5. To organize lectures and congresses dealing with venereal disease. 6. To make known to the various governments, through the medium of the constituent national societies, the results of all investigations; likewise, to spread information in regard to the best means of supporting the campaign against the venereal menace, from both the national and the international point of view.

As among the measures needed at once, the confederation proposes the adoption of international measures against charlatanism; the elaboration of a moral code identical for the two sexes, and a study of the principles of legal responsibility, notification of disease, obligatory treatment, sanctions, etc. All countries without exception will be invited to enter this confederation, including Germany, if assurance is given that its delegate did not sign the famous manifesto of the ninety-three German scientists.

Medical Inspection of Schools

In a report presented to the municipal council of Paris, M. Charles Joly gives the results of the medical inspection of schools. During the course of the school year, 23,963 pupils, 11,666 boys and 12,297 girls, have been examined, with the result that 9,054 boys and 9,678 girls were found to be in a normal state of health. With respect to the boys, the following classification was reached: general condition

good, 51.6 per cent.; fairly good, 26 per cent.; passable, 16.6 per cent.; bad, 5.8 per cent. The classification of the girls was: general condition good, 52.4 per cent.; fairly good, 26.5 per cent.; passable, 15.9 per cent.; bad, 5.4 per cent.

Influenza and Mortality from Pulmonary Tuberculosis

Dr. G. Ichok gives in the *Revue d'Hygiène* the results of his special study on the influenza epidemics of Paris, occurring between 1900 and 1920, in their relation to mortality from pulmonary tuberculosis. During this period there were twelve influenza epidemics of varying intensity and duration. Ichok publishes a table that gives evidence of an undeniable recrudescence of deaths from pulmonary tuberculosis corresponding in time to the influenza epidemics:

Difference Between the Weekly Mortality from Pulmonary Tuberculosis Before and During the Periods of Influenza Epidemics

Years of epidemics	1900	1901	1905	1907	1911	1918-1919	1920
Difference between the mortality from tuberculosis before and during the influenza epidemic	+12.2	+38.4	+28.6	+45.7	+30.8	+41.3	+35.4

In 1907 and 1918, the difference between the mortality before and during the influenza epidemics is very marked. Again, in comparing the mortality from tuberculosis and from influenza during the epidemic of influenza and during the first and the second three months after the epidemic, it may be noted that, during the first quarter after the influenza epidemic, the danger was not entirely eliminated; deaths from influenza still occur, though it is evident that the force of the epidemic is broken. As for the mortality from pulmonary tuberculosis, it is noticeable that, with the exception of the year 1905, there was a considerable decrease during the first three months after the epidemic, and a still further decrease during the second three months afterward. In other words, the incontestable increase in mortality from tuberculosis during the influenza epidemics is followed by a decrease. The figures are approximately the same as those recorded before the epidemics, and are at times even lower. One is, therefore, entitled to conclude that the curve of mortality from pulmonary tuberculosis is influenced unfavorably by influenza epidemics.

A New Institute of Colonial Medicine

The deliberations of the council of the University of Algiers establishing an institute of hygiene and colonial medicine in northern Africa have been approved by the issuance of a governmental decree.

Difficulties in the Application of the Compulsory Smallpox Vaccination Law

Dr. A. Delon, director of the municipal bureau of public health in Nimes, has called the attention of the Société de médecine publique to the difficulties encountered in enforcing the compulsory smallpox vaccination law, especially in the matter of revaccination. The vaccination of children proceeds quite regularly, and young men are revaccinated when they enter the army, but young women are, on the other hand, almost never revaccinated. After men and women have reached their majority, they almost never think of being revaccinated. As a consequence, a large portion of this part of the population is in a state of morbid receptivity. It is to be hoped that the vaccination law will be so modified as not only to make the revaccination of adults compulsory but also to furnish the necessary legal weapons for the complete enforcement of the law.

BUENOS AIRES

(From Our Regular Correspondent)

Feb. 20, 1923.

University Reforms

The professors in the Buenos Aires Medical School held a meeting recently to consider existing laws on university organization, and reforms that seem necessary. A committee was appointed to make a study of the matter and submit a report at the next meeting. Dr. Alfredo Lanari, former dean and present representative of the medical school on the superior board of education, has presented a plan, which is essentially as follows: 1. The faculties, and not the government, shall determine the length of courses (it is unanimously accepted here that seven years of study should be required, besides preparatory courses). 2. On the governing board, the professors shall have six representatives; the assistant professors, four, and the students, four (it is generally thought that the last number is excessive), appointment being made at separate meetings. 3. The dean shall be appointed at a general meeting of professors, assistant professors and students. This plan has been received with approval by many; others, however, attack its provisions and claim that all present evils are due to student ascendency, which they consider both harmful and unjustified.

The evident insufficiency of university funds will apparently be obviated to some extent, as congress has increased the annual appropriation granted to the Buenos Aires University by $800,000.

A number of newspapers are conducting a persistent campaign against present university conditions. The attacks are obviously unjust, in the light of the important progress achieved in the last few years.

Medical Visits

The rector of the university, Prof. José Arce, who has returned from the United States, expresses his satisfaction with the splendid organization of the surgical clinics he visited.

There is general interest in the announced arrival of a group of American physicians, now touring South America.

The Salomon Case

Prof. Hugo Salomon of Vienna, on his arrival a few months ago, tried to validate his diploma here. In this, he succeeded only partially, as he failed in one subject. In the meantime, he opened an office, meeting with an amazing success in the treatment of diseases of nutrition. The physicians' syndicate reported him for illegal practice of medicine. In spite of the explicit terms of the law governing the matter, the judge discharged Dr. Salomon. The incident has caused much agitation and has furnished the defendant with no end of free advertising. Dr. Salomon, whose competence in his field is beyond doubt, intimates that he is using new methods, originated by him. The faculty has denied him the privilege of validating his diploma, and has just issued validation rules far more rigid than those previously in force. This action has undoubtedly been influenced by the rush of European physicians to all these countries since the war.

Eye Hospital

The Public Welfare Society has just opened an ophthalmologic hospital and dispensary, which will replace the old Santa Lucia Hospital. The new institution is considered the best of its type in the world.

Cancer Institute

The cancer institute, officially known as the Institute of Experimental Medicine, has just opened its doors. The institution, in charge of Dr. A. H. Roffo, will have room for

sixty patients. There are well-equipped laboratories, and a large personnel. The annual appropriation is over 300,000 pesos ($110,000). Normally, the institute is a dependence of the medical school.

Public Health Work in the Provinces

The National Department of Health has opened small hospital-dispensaries at Chamical y Chilecito (La Rioja), Molinos y Guemes (Salta), Copacabana y El Alto (Catamarca), Perico y La Quiaca (Jujuy) and La Banda (Santiago del Estero), and in the cities of Corrientes, Rosario and Santa Fé y Posadas. These stations are used for smallpox vaccination, disinfection and serum distribution, and are centers for infant welfare work. In addition, ten beds are available for emergency cases. The hospitals in Corrientes and Rosario y La Quiaca are acting as disinfecting stations for freight imported from abroad. A station of the same type is to be established at Las Cuevas, where the Chilean railroad first enters Argentina.

PRAGUE

(From Our Regular Correspondent)

Feb. 28, 1923.

Campaign Against Tuberculosis

The ministry of railroads is undertaking an intensive campaign for the eradication of tuberculosis among its employees. A report was recently published of a tuberculosis survey carried out among the railroad employees in Ruthenia, which is being used as an experimental district. In the course of the survey, 2,929 employees were examined for the ministry by Drs. C. Amerling and V. Mikenda. In addition to a routine physical examination, each patient was given the Mantoux tuberculin test. On the basis of the results, the persons examined were divided into five groups: The first, group comprised those who had no physical signs of pulmonary tuberculosis and did not react to the tuberculin test; it numbered 43.6 per cent. of the total. The second group, 15.5 per cent., consisted of those in whom the tuberculin test was negative but examination disclosed slight physical changes in the chest. The third group, 12.5 per cent., gave positive tuberculin reactions, but did not show any physical signs of the disease. In the fourth group were classified those cases in which there were positive tuberculin reactions and positive signs of a tuberculous process in the lungs. Finally, in the fifth group were placed those cases presenting definite signs of pulmonary tuberculosis, and already under treatment for the disease by the insurance physicians. In all cases, the social condition of the employees, particularly of those who showed positive signs of tuberculous infection, was investigated. It was found that tuberculosis is most common among that category of railroad workers employed in building new roads. A chart was prepared showing the percentages of positive tuberculous infection in different railroad stations. It is notable that the percentage of persons who reacted positively to tuberculin is unusually low, but that, on the other hand, the number of persons who showed definite signs of tuberculosis is very high. Because the tuberculosis death rate of the railroad employees is very high—the proportionate mortality for tuberculosis in 1920 was 23 per cent.—the results of the survey seem to indicate that, while the tuberculosis morbidity rate in general in this part of the country is not very high, there are very frequent tuberculosis infections in a later period of life. On the basis of these studies, the ministry of railroads has constructed a very complete program for the eradication of tuberculosis among its employees. It is in an advantageous position for this purpose because it has an efficient machinery in the well developed system of health insurance for its employees. It employs 749 physicians for the care of about half a million employees. Not only the employees themselves, but also the members of their families, are included in the scheme of health insurance. In order to make expert service accessible to all employees, tuberculosis dispensaries are being created in every district under the direction of specialists. These dispensaries are also used as places from which tuberculous patients are sent to a sanatorium maintained by the ministry for the care of railroad employees affected with tuberculosis. Recently, an interesting experiment was made which aimed at a better follow-up of those patients who have been treated in the sanatorium or have attended the dispensary clinics. Several male social workers were appointed for the different districts, whose task it will be to follow up the tuberculous employees and to see that the efforts of the ministry to promote their health are not being thwarted through ignorance or lack of interest on the part of the employees themselves. This is the first experiment of the kind in which an intensive effort has been made to eradicate tuberculosis from a social unit of the republic; it is, therefore, being followed with keen interest by public health workers.

Venereal Disease Decree

The ministry of health recently issued a decree based on recommendations by the venereal disease survey conducted by Dr. Hynek L. Pelc under the auspices of the ministry last year. It was brought out by the survey that new infections with syphilis have apparently diminished since the close of the war, but that syphilis was carried by the returning soldiers to their families. It therefore seems necessary to make the diagnosis of syphilis among children as easy as possible. The decree makes it the duty of the state Wassermann laboratories to examine, free of charge, all blood specimens sent to the laboratory by child welfare centers, orphanages, children's homes, children's hospitals and kindred institutions. Lying-in hospitals and prenatal clinics are also included among institutions enumerated in the decree. Prior to this time, the institutions had to pay for the examinations unless the blood was taken and sent to the laboratory by a state health officer. It is anticipated that through this measure the diagnosis of syphilis will be made easier for the pediatrician, and that he will therefore take a more active part in the eradication of this disease.

BERLIN

(From Our Regular Correspondent)

March 3, 1923.

Modern Theories of Color Vision

Professor von Hess, the ophthalmologist, of Munich, has been devoting himself of late years to the problem of color vision. Especially his researches on the color vision of insects have awakened general interest. An interesting article on the history of the various theories of color vision since Newton's time, written by Wilhelm Ostwald, formerly professor of chemistry in Leipzig, was published in the *Deutsche medizinische Wochenschrift*, Sept. 15, 1922. He distinguishes two periods of development since Newton: (1) the qualitative, and (2) the quantitative. In the first period, not only physicists and mathematicians made a special study of color vision, but also such men as Goethe and Schopenhauer manifested considerable zeal for the subject. But owing to their lack of knowledge of physics, they were unable to get a clear conception of anything more than the psychologic aspects of the problem. It was only with the advent of Young and Helmholtz that further progress was made from the side of physics. Ewald Hering treated mainly the physiologic and the psychologic aspects of the question. He rejected the three-color theory (yellow, red, blue), and

succeeded in establishing in the circle of color vision four fundamental colors (yellow, red, blue, green). The quantitative theory of color vision, which is based on the discovery that by means of proper light filters the three components of every color; namely, the *Vollfarbe* (the main color principle in which is inherent the shade of color present), the white index and the black index can be exactly determined, was thoroughly studied by Wilhelm Ostwald in 1915. The researches of Professor Hess are based on the important finding of Hering that colors as seen by the totally color blind have about the same relative luminosity that they have for the normal eye when seen in the deep twilight, when the colors are not perceived as such but present merely varying shades of gray. In other words, of the colors of the spectrum, red, orange, yellow, green-yellow, green, blue and violet, the color that appears the brightest by daylight is yellow; then follow green-yellow and orange, green, red, blue and violet. In deep twilight, however, conditions are quite reversed, for here green-yellow presents the brightest gray; then follow yellow and green; then green-blue and blue; then orange, and finally red. A deep blue corn-flower (*Kornblume*) appears in a gray dusk much brighter than a flaming red poppy. If one draws a curve, as was done by Hering, representing the relative brightness of the various colors when seen in a gray dusk, green-yellow will be found at the top; it is surprising to note that red appears almost like black. The relative brightness of the colors as seen in a normal light by the totally color blind will be the same as the foregoing. Professor von Hess has examined a large number of animals, and has found that all invertebrates and fishes see colors in the same way as the totally color blind. For instance, for an animal that has the habit of seeking out the brightest place in the examining vessel, yellow is not the brightest spot but green-yellow; red is for such an animal exceedingly dark, much darker than dark blue, etc. It is a well known fact that the pupil of the human eye contracts in direct proportion to the brightness of the light that enters it. Hess found that the pupil of the eye of the cuttlefish, which in its external appearance resembles the human eye, contracts most under the influence of green-yellow and least under red, since, for the eye of the cuttlefish, green-yellow has the highest and red the lowest degree of brightness. The reaction of the eyes of the totally color blind would be the same as that of the cuttlefish.

The examination of railroad men for partial or total color blindness has usually been carried out by requiring the examinee to select red, green, etc., from a large number of colored yarns. The engineer who in 1918 was responsible for a railway accident in Dresden, in which forty-two persons were killed, had been examined five times by physicians who used this method and had been declared to possess normal color vision. Hess is the inventor of an apparatus that he terms a "pupilloscope," with which a physician observes the eye of the subject through a magnifying glass while colored and gray light is thrown alternately into the eye. The gray light is produced by two adjustable prisms of gray glass. If the light passes through the small ends of the prisms, it is light gray; if it passes through the thick ends, it is dark gray. A certain color is selected; for instance, green, and the prisms of green glass are adjusted until, in changing from green to gray, no movement of the pupil takes place. In this manner the degree of brightness for a given eye is determined. As the findings with respect to brightness are for the eyes of color-blind persons quite different from those secured in the examination of normal eyes, color blindness can be discovered at once in a purely objective manner. In this connection, it is interesting to note that Hess examined with his pupilloscope the aforementioned locomotive engineer, and in a few hours discovered red-green blindness. As slow reaction of the pupil of the eye is one of the first symptoms of spinal paralysis, the pupilloscope is indispensable for the early diagnosis of this disease. This ingenious apparatus should therefore be found in every modern eye clinic.

It may be well to mention the results of a few more of Hess' researches on light and color vision. He has discovered that birds are blind to blue because they have yellow granules in the retina; that numerous invertebrate animals, because of the fluorescence of their eyes, can see the ultraviolet light that is invisible to the human eye; that it is possible for certain of the lower animals that have no eyes to perceive differences in brightness almost as well as the human eye. His comparative researches on accommodation are also worthy of mention. The achievements of Hess in the advancement of scientific knowledge in the field of color vision have also received definite recognition, for an international committee of award recently bestowed on him the Helmholtz gold medal, which is awarded every ten years for the most significant researches in the domain of optics.

Findings of School Physicians in Continuation Schools for Girls

In 1911, the first school physicians for continuation schools were appointed in Bremerhaven and in Schöneberg. In 1921, according to statistics, there were twenty-six school physicians engaged in continuation schools. A comparison of the average weight and height as found in 1918 and in 1921-1922 shows that last year there was a distinct average increase, not only as regards weight but also as regards height. The health of 7 per cent. of the pupils, however, was declared to be "unsatisfactory." The morbidity statistics covering 1,900 pupils revealed anemia in 23 per cent., curvature of the spinal column in 15.7 per cent. and heart defects in 1 per cent., to which may be added disturbances of heart action in 5 per cent. Refraction defects of the eyes, in most cases not corrected, were found in 14.9 per cent.

Care of Cripples in Prussia

Since legislation was enacted providing for the care of cripples, 20,000 cripples have been given treatment, and far-reaching, prophylactic measures for the prevention of crippling accidents and the elimination of the causes of crippling in general have been taken. Rural leagues have contributed generously to this cause according to their means, and the Prussian legislature has appropriated state funds which, to be sure, will not become available until 1924. Some difficulty is being experienced in the application of the law, for the reason that in every case it must be determined whether or not the cripple is in need of institutional care, and for the further reason that the persons or authorities on whom the burden of a cripple's maintenance and care falls may change frequently and repeatedly, depending on whether or not the cripple is in need of institutional care.

Marriages

WILLIAM C. KIRSTEN, Milwaukee, to Miss Viola Schoenbeck of West Bend, Wis., February 3.

EVARISTO BRUAL to Miss Felicidad Cordero, both of Bauan, Batangas, P. I., January 10.

WILLARD T. NICHOLS, Milwaukee, to Miss Grace Harrington of Seattle, February 17.

MAXIMILIAN KERN to Miss Elaine Frances Hoexter, both of Chicago, March 10.

JESUS AZCONA to Miss Josefina Quilez, both of Manila, P. I., recently.

Deaths

George Harwood, Dubuque, Iowa; University of Bombay, India (licensed, Iowa, 1886); for many years served with the British Army in India; formerly superintendent of the Ashton-under-Lyne, and Birkenhead hospitals, England; at one time a practitioner in Canada; also a druggist; aged 82; died, March 24, at the Finley Hospital, following a long illness.

George A. Fackler ✠ Cincinnati; Medical College of Ohio, Cincinnati, 1881; emeritus professor of medicine, University of Cincinnati College of Medicine; president of the board of health; past president of the Ohio State Medical Association; on the staff of the Cincinnati General Hospital, where he died, March 26, aged 61, of erysipelas.

William Richard Campbell ✠ Clinton, Mo.; Washington University Medical School, St. Louis, 1911; president of the Henry County Medical Society; county coroner; deputy state commissioner of health; aged 44; died, March 26, at the Johns Hopkins Hospital, Baltimore, following an operation for brain tumor.

Frank P. Strickler, Sr., Elizabethtown, Ky.; Medical Department University of Louisville, Louisville, 1887; member of the Kentucky State Medical Association; a practitioner in Elizabethtown for nearly a half a century; aged 67; died, March 17, of pulmonary edema, contributing cause, tumor of chest.

Emil Schwarz, New York; University of Vienna, Austria, 1905; member of the New York Pathological Society; formerly pathologist to the Woman's Hospital, New York, the Brooklyn Hospital, and the Carson C. Peck Memorial Hospital, Brooklyn; aged 41; died, March 29, of pneumonia.

Charles Samuel Morrow, Memphis, Tenn.; Memphis Hospital Medical College, 1899; member of the Tennessee State Medical Association; formerly clinical instructor of medicine at his alma mater; served in the M. C., U. S. Army, during the World War; aged 46; died, March 14.

Leroy S. Holcomb, Pennsville, Ohio; Medical College of Ohio, Cincinnati, 1868; member of the Ohio State Medical Association; formerly president of the Morgan County Medical Society; aged 83; died, January 18, of empyema of the gallbladder and carcinoma of the stomach.

Eugene E. Axtell ✠ Marinette, Wis.; Chicago Homeopathic Medical College, Chicago, 1890; member of the Radiological Society of North America, and former president of the Marinette County Medical Society; aged 57; died, March 22, of angina pectoris.

Albertus C. Wolfe ✠ Columbus, Ohio; Columbus Medical College, 1883; member of the American Academy of Ophthalmology and Oto-Laryngology; on the staff of the Grant Hospital; aged 65; died, February 2, of bronchopneumonia.

George Frederick Koehler ✠ Portland, Ore.; Medical Department of Columbia College, New York, 1889; assistant clinical professor of medicine at the University of Oregon Medical School, Portland; aged 55; died, March 11.

Paul Wegeforth ✠ San Diego, Calif.; Johns Hopkins University Medical Department, Baltimore, 1912; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 36; died, March 30.

Benjamin F. Harding, Mansfield, Ohio; Fort Wayne College of Medicine, Fort Wayne, Ind., 1889; member of the Ohio State Medical Association; aged 61; died, March 23, at Sebring, Fla., of tuberculosis.

William Theodore Hope, Chattanooga, Tenn.; Bellevue Hospital Medical College, New York, 1873; formerly president of the board of health and city physician; aged 72; died, March 20, of paralysis.

Charles A. Van Velzer, Fort Scott, Kan.; Hahnemann Medical College and Hospital, Chicago, 1886; member of the Kansas Medical Society; aged 62; died suddenly, March 17, of chronic nephritis.

Leonard J. Somers, Rochester, N. Y.; Albany (N. Y.) Medical College, 1889; member of the city council; superintendent of the Monroe County Hospital; aged 57; died, March 11.

William Wallace Kimmell, Lebanon, Ore.; Medical College of Ohio, Cincinnati, 1881; for eight years member of the city council; aged 72; died, March 18, following a long illness.

Frank Kurtz Addy, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1903; aged 48; died, February 21, at Santa Barbara, Calif., of influenza and diabetes mellitus.

Larkin L. Harris, Cleburne, Texas; University of Arkansas Medical Department, Little Rock, 1893; member of the State Medical Association of Texas; aged 59; died, January 27.

James Lassiter Everett, Palmer, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1881; aged 71; died, March 21, at the Baptist Sanitarium, Dallas, of senility.

Oscar FitzMerton Gittens, Waterbury, Conn.; Middlesex College of Medicine and Surgery, Cambridge, Mass., 1921; aged 28; died, February 26, of influenza and pneumonia.

George Russell Fessenden, Ashfield, Mass.; Medical School of Harvard University, Boston, 1879; formerly member of the state legislature; aged 74; died, March 18.

David Joseph Chinn, Bettendorf, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1892; aged 62; died, March 31, following a long illness.

C. A. Steward, Grant, Okla.; Barnes Medical College, St. Louis, 1896; member of the Oklahoma State Medical Association; aged 61; died, January 6.

George Thomas Simpson, Breeding, Ky.; University of Louisville Medical Department, 1878; aged 71; died, March 20, following a long illness.

Charles A. Hunter ✠ Reddington, Ind.; Physio-Medical College of Indiana, Indianapolis, 1886; aged 62; died, March 23, following a long illness.

Milton A. Trow, Chatfield, Minn.; College of Physicians and Surgeons, Keokuk, Iowa, 1876; aged 70; died suddenly, March 17, of heart disease.

Albert C. Landes, Brooklyn, Iowa; Iowa College of Physicians and Surgeons, Des Moines, 1884; aged 69; died, April 2, following a long illness.

Alben Young ✠ Chicago; Chicago Medical College, 1889; on the staff of the Ravenswood Hospital; aged 62; died, April 2, of heart disease.

James Anderson Gardner, Greensberg, Kan.; Cleveland Medical College, Cleveland, 1878; aged 67; died, March 11, of cerebral hemorrhage.

Thomas Wisner Sloan, Bellevue, Wash.; University of Louisville Medical Department, Louisville, Ky., 1877; aged 74; died, March 16.

Frank P. Poignee, St. Louis; Missouri Medical College, St. Louis, 1890; also a druggist; aged 56; died suddenly, March 17, of heart disease.

John Sunderlin Van Vechten ✠ Chateaugay, N. Y.; University of Michigan Medical School, Ann Arbor, 1883; aged 67; died, March 27.

Alvin J. Roller, Bristol, Tenn.; College of Physicians and Surgeons, Baltimore, 1882; aged 64; died, March 27, of bronchopneumonia.

William Haines Lyford, Port Byron, Ill.; Rush Medical College, Chicago, 1859; also a druggist; aged 86; died, April 2, of senility.

Bonifacio Rosello y Basa, Manila, P. I.; University of St. Thomas Medical Department, Manila, 1880; aged 68; died, January 5.

James M. Conrad, Mexia, Texas; University of Tennessee College of Medicine, Memphis, 1885; aged 65; died suddenly, March 22.

Theodore Elliott Wannamaker, Jr., ✠ Cheraw, S. C.; Jefferson Medical College of Philadelphia, 1906; aged 41; died, March 13.

Isaiah B. Gibbs, Sycamore, Ohio; Physio-Medical Institute, Cincinnati, 1871; aged 79; died, February 22, of arteriosclerosis.

Orville Forrest Rogers ✠ Boston; Medical Department of Columbia College, New York, 1869; aged 78; died, March 23.

James Wesley Minner, Caney, Kan. (licensed, Kansas, 1904); aged 64; died, February 6, of cerebral hemorrhage.

Peter Yost, Pittston, Pa. (licensed, years of practice); aged 91; died, February 23, of influenza and pneumonia.

David B. Hand, Scranton, Pa.; New York University Medical College, New York, 1870; aged 75; died, April 1.

William B. Pickard, Nashville, Tenn. (licensed, Tennessee, 1889); aged 61; died, March 26.

Nicholas Stutsman, Sparks, Okla. (licensed, years of practice); aged 75; died, March 20.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION]

INCOMPATIBILITY OF MERCUROCHROME-220 SOLUBLE WITH LOCAL ANESTHETICS AND ALKALOIDS

L. E. Warren, Ph.C., B.S.

In THE JOURNAL, April 7, 1923, p. 1023, a letter was published from Dr. Charles E. Stolz, entitled "Caution in Use of Mercurochrome-220 Soluble" in which he reported an accident in treatment owing to an apparent precipitation of the drug by procain. Fortunately the results were not serious, but, in view of our rather meager knowledge of the chemical properties of mercurochrome-220 soluble, it seemed desirable to study its incompatibilities further with the view of preventing future mishaps. Accordingly experiments were undertaken with the view of verifying Dr. Stolz' observation with procain and also to determine whether other local anesthetics than procain were incompatible with mercurochrome-220 soluble. It is well known that many basic substances, such as alkaloids and local anesthetics, are precipitated by certain complex mercury salts; but Dr. Stolz appears to have been the first to observe an incompatibility between mercurochrome-220 soluble and a local anesthetic.

Chemically mercurochrome-220 soluble is the disodium salt of dibromo-oxymercuri-fluorescein. If treated with an acid the sodium combines with the acid radical and the bromomercuri-fluorescein complex is precipitated as an insoluble compound having acidic properties.

In these tests a small portion of a 2 per cent. aqueous solution of each of several local anesthetics was treated with a few drops of a 2 per cent. aqueous solution of mercurochrome-220 soluble. The strength of 2 per cent. for each substance was selected because this was assumed to represent a fair average of the concentration in which the several substances are employed in medicine. In cases of scant solubility of the anesthetic substance in water a few drops of diluted hydrochloric acid were added in order to render the material soluble.

The following substances gave precipitates: alypin, apothesin, benzocain, butyn, cocain hydrochlorid, B-eucain lactate, phenacain, procain, propaesin, quinin and urea hydrochlorid, tropacocain hydrochlorid and stovain.

The precipitate in each case was of a deep red color, was amorphous and did not become crystalline on standing. In some instances analysis of the dried precipitate showed that it contained all of the essential constituents of the dibromo-oxymercuri-fluorescein radical, viz., bromin, mercury and the dye substance, but that it did not contain sodium or the acid radical with which the basic substance was originally combined. Preliminary tests indicated that the precipitates were probably too soluble to be of value in the analytic separation of the local anesthetics from other substances but that they were sufficiently insoluble to render dangerous the concomitant prescribing of one of the local anesthetics and mercurochrome-220 soluble. The test was also applied to aqueous solutions of benzyl alcohol and saligenin, substances which have local anesthetic properties but which do not have basic properties. No precipitate was given with either substance.

As a matter of interest the test was applied to a salt of a number of vegetable alkaloids or their derivatives in aqueous solution. A red precipitate was given with each of the following substances: aconitin hydrochlorid, apomorphin hydrochlorid, atropin sulphate, brucin hydrochlorid, cephaelin hydrochlorid, cinchonidin sulphate, cinchonin sulphate, codein sulphate, diacetyl-morphin hydrochlorid, emetin hydrochlorid, ethyl hydrocuprein hydrochlorid, ethyl morphin hydrochlorid, gelsemin hydrochlorid, homatropin hydrochlorid, hydrastin hydrochlorid, morphin sulphate, narcein hydrochlorid, narcotin hydrochlorid, nicotin hydrochlorid, papaverin hydrochlorid, physostigmin sulphate, pilocarpin nitrate, quinidin sulphate, quinin hydrochlorid, sanguinarin hydrochlorid, scopolamin hydrobromid, solanin hydrochlorid, spartein sulphate, strychnin sulphate and thebain hydrochlorid.

As in the case of the local anesthetics the precipitates appeared to be too soluble for the reaction to be of much value in the analytic determinations of the alkaloids. A few basic substances did not give any precipitate with mercurochrome-220 soluble. These were caffein, colchicin hydrochlorid, coniin hydrochlorid, methyl atropin bromid, theobromin sodium salicylate and theophyllin sodium acetate.

Correspondence

DO ANIMALS TALK?

To the Editor:—The quotation in THE JOURNAL (March 17, p. 764), mentioning the white mountain goat as intelligent reminds me that the caretaker of a small herd at an amusement park called his dog to drive them from another dog that they were annoying. The herd ran as soon as they heard the name of the dog of which they were afraid, apparently indicating that they understood language.

Dogs to a high degree and, to a less degree, cats, horses, cattle, sheep, elephants and probably other animals associated with man understand a good many words. One of the best evidences of understanding on the part of animals is the failure to understand under different circumstances. For instance, sheep habituated to the call "Co'nan" do not respond to "Co'day," and vice versa. In Strasbourg, my wife called a dog *chien* without getting a response, but he responded immediately to *Hund*. In English, which is richer in pet names for animals, a dog may not respond to the word dog, but will to some familiar vocative. My dog, for instance, looks for another dog on hearing the word, probably for the same reason that most of us on hearing the word man called out would take it as referring to some one else. Even animals of comparatively low intelligence respond to words of command—in the language to which they have been trained. Just how much dogs understand of ordinary conversation is sub judice.

Recently a good many items have appeared with reference to imitation of human speech by dogs. While my own dog says "out" fairly distinctly when he wants to get out, it seems to me that all these reports are fallacious. Certain sounds emitted by dogs resemble words in one language or another, but it is improbable that they are really trying to pronounce words, even after learning that a certain sound gets them something. A recent assertion of a dog's begging for "jus' a crumb" is probably no more significant than the fact that a cat often goes about, saying "not now"; the difference is that the former happens to make sense, and the latter not.

Another example was the monkey that Professor Garner tried to teach to speak. He got it to say *feu* (French for fire) quite intelligently when a match was lighted. On being asked why he did not teach it the English word, he merely smiled. A diagram may be superfluous, but all there was to it was that the monkey enjoyed blowing out the flame.

It is a curious fact that the only "animals" that have been taught to speak at all fluently have been parrots and a few other birds whose speech organs are so much more different from the human organs than those of mammals. Very con-

tradictory statements are made as to whether parrots, magpies and blackbirds speak with any comprehension.

Professor Garner's study of the speech of animals really deserves more consideration than it has received. He was quite conservative, estimating the maximum vocabulary of monkeys at about thirty "words," a word in this sense being a definite cry, usually common to all members of a species, wherever found, and indicating some emotion, not a concept, as in the case of human language.

Unless better evidence is presented that parrots do use words understandingly and that the occasional utterance of such words as out, damn, come on, and jus' a crumb by more or less trained dogs is really limited to the expression of a definite idea, I think it may be said that the more intelligent lower animals have word perception to a considerable degree, but are absolutely lacking in word expression. It should also be questioned whether word perception is strictly so or whether there is simply an association of certain sounds (perhaps including several words) with certain ideas. The fact that dogs have a relatively large perceptive vocabulary of proper names as compared with common nouns, verbs or adjectives suggests that there is merely an association of a sound complex with some object or action. I knew one dog that recognized at least fifty persons by name—sometimes by one name each, sometimes by the various relationship terms that would be used in a family; but this dog was exceptionally intelligent, could remember at least two years, and apparently got the sense of conversation without reference to intonation.

A. L. BENEDICT, M.D., Buffalo.

SUPERIOR METHOD OF STAINING TUBERCLE BACILLI

To the Editor:—At the Kula Sanitarium, for some time, we have been using, as a routine, a method of staining tubercle bacilli which is eminently satisfactory and is superior to the usual Ziehl-Neelsen stain.

A smear of sputum is prepared and fixed in the usual manner. It is steamed for two full minutes with anilin gentian violet prepared according to the method of Weigert, as described by Stitt, boiling being avoided. The slide is rinsed with running water and covered with gram-iodin solution (Lugol) for two minutes. It is decolorized with acid alcohol (usual solution), washed in running water, and counterstained with 0.1 per cent. solution of pyronin for several seconds. Though we have found pyronin to be the best counterstain, any other may be used.

In the medical literature accessible to me I have not been able to find this method described and would appreciate greatly if you would let me know where I could find some similar procedure described.

PETER MJEDLOFF, M.D., Maui, Hawaii.

Prohibition in Turkey.—The *Wiener klinische Wochenschrift* relates that prohibition of alcohol, which has been in vogue in Asia Minor for some time, is to be enforced throughout the whole of Turkey on and after March 1, 1923. The regulations prohibit any kind of production, importation or sale, with penalty of 50 Turkish pounds per kilogram, and destruction of the liquor. Any infringement of the law or drunkenness entails a fine of from 50 to 200 pounds, or imprisonment for from six to twelve months. All vessels serving for production or consumption of alcohol must be made unusable, and all alcohol on hand must be sent out of the country. The consumption of alcohol for medical purposes is to be under strict supervision. At the same time, regulations for compulsory treatment of syphilis were drawn up and measures to prevent abuses at weddings.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ACETYLSALICYLIC ACID

To the Editor:—My daughter, a senior at our college for women, writes me that one of the students takes aspirin, I presume the 5 grain tablet, every one hour, two hours or three hours for headache, and this on the advice of her physician. I hold that aspirin (acetylsalicylic acid) is a coal-tar or synthetic preparation and not made from wintergreen, and is a heart depressant, either immediate or remote. In my practice I have often found damaged hearts, and the only history given is a quantity of aspirin used, usually 5 or 10 grains at a dose, generally for headache. When I prescribe it, I generally add strychnin sulphate, aromatic ammonia or sodium bicarbonate. What is the general belief of the profession in regard to this drug? I know many able men using it almost ad libitum, just as quinin or sodium bicarbonate, and with no protective drug.

M.D., South Carolina.

ANSWER.—The letter of our correspondent is typical of much of the general misinformation concerning acetylsalicylic acid. The manufacturer's claim to the contrary notwithstanding, it has been abundantly proved that synthetic salicylates are not more toxic than are those made from oil of wintergreen. The salicylates, including acetylsalicylic acid, are not markedly depressant to the heart, nor are they responsible for the heart damage the correspondent finds in users of aspirin. The association is probably accidental, as rheumatic patients who often have damaged hearts find salicylates useful for the relief of their aches and pains. Acetylsalicylic acid should not be prescribed in combination with alkalis. Alkalis decompose acetylsalicylic acid with formation of alkali salicylate, which causes greater gastric irritation than if the undecomposed acetylsalicylic acid were given.

The chief objection to the indiscriminate use of this or other analgesic for the relief of headache or other pain is that merely the symptom is relieved, without any effect on the underlying cause, which in the course of time might become aggravated by the neglect of more appropriate treatment.

AVOIDANCE OF ANAPHYLACTIC SHOCK AFTER SECOND IMMUNIZING DOSE OF ANTITOXIN

To the Editor:—If a patient is given an immunizing dose of antitoxin, what are the chances of his developing anaphylactic shock if a second dose of antitoxin is given twelve or fourteen days later intramuscularly? The general opinion is that all contacts should be immunized. Prophylactic doses, however, do not always do what they are expected to do. I would not hesitate to give antitoxin to a person with diphtheria, even if he had been given a dose two weeks before; but I do hesitate in giving an immunizing dose through fear that he may take the disease in spite of this treatment, and be placed in a dangerous condition when the use of antitoxin may later be urgently needed.

A. J. PEARCE, M.D., South Heights, Pa.

ANSWER.—There is little danger of a severe reaction when the second dose of serum is given after an interval of from twelve to fourteen days. Practice varies as to the administration of immunizing doses of antitoxin to exposed persons. When conditions are such that exposed children cannot be closely watched for the first signs of diphtheria, immunization is advisable. When the exposed children can be carefully observed and given antitoxin at the onset of infection, the prophylactic dose may be omitted. By making intracutaneous tests with diphtheria toxin according to the Schick method, it is possible to avoid the administration of antitoxin to those who are already immune. This would be wise in instances in which many children are involved, as in schools and institutions.

PROOF OF PREGNANCY

To the Editor:—1. Can a physician say that a woman has been pregnant or not been pregnant by merely looking at the cervix? 2. Can a physician determine whether a woman has been pregnant if there is no laceration of the cervix or if the striae gravidarum are not present? 3. Can it be told that a woman has been pregnant and has had an abortion after three months? N. B. SALERNI, M.D., Indianapolis.

ANSWER.—1. No.

2. No, except immediately after delivery.

3. No. The subject is fully discussed in various textbooks on legal medicine and on obstetrics.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 8-9. Sec., Dr. J. W. Walker, Fayetteville.

IOWA: Iowa City, May 31-June 2. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

MASSACHUSETTS: Boston, May 14-16. Sec., Dr. Charles E. Prior, State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.

NEVADA: Carson City, May 7. Sec., Dr. S. L. Lee, Carson City.

Rhode Island July Examination

Dr. Byron U. Richards, secretary, Rhode Island State Board of Health, reports the written and practical examination held at Providence, July 6-7, 1922. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Eleven candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Harvard University	(1921)89,	(1922)	90.4
Tufts College Medical School	(1921) 83.9, 85.5, 86.7, 87.5, 89.5,		89.6
Cornell University		(1919)	85.5
Eclectic Medical Institute		(1904)	93.1
McGill University, Quebec		(1917)	86.5

New Jersey June Examination

Dr. Alexander MacAlister, secretary, New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, June 19-20, 1922. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 27 candidates examined, 23, including 4 osteopaths, passed, and 4 failed. Sixty-six candidates were licensed by reciprocity and 4 candidates received osteopathic licenses by reciprocity. Two candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University	(1920) 77.6,	(1921)	89.5
Northwestern University		(1919)	87.2
Johns Hopkins University	(1920) 85,	(1921)	83.8
University of Maryland		(1921)	87.4
Tufts College Medical School		(1921)	78.5
Cornell University		(1921)	86.8
Hahnemann Medical Coll. and Hosp. of Philadelphia		(1921)	79.8, 87
Jefferson Medical College	(1917) 84.2,	(1921)	83
University of Pennsylvania	(1920) 85.8, 89.1,	(1921)	84.3, 84.8, 90
University of Catania, Italy		(1914)*	77
University of Naples, Italy		(1911)*	79
Osteopaths		80.3, 80.3, 81.5,	83.7

FAILED

Hahnemann Medical Coll. and Hosp. of Philadelphia		(1921)	72.3
University of Budapest, Hungary		(1914)*	66.2
University of Naples, Italy		(1916)*	67.6
University of Kharkov, Russia		(1905)*	68.8

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Yale University		(1902)	Connecticut
George Washington University		(1912)	Dist. Colum.
College of Medicine and Surgery, Chicago		(1911)	Tennessee
State University of Iowa College of Medicine		(1917)	Iowa
University of Louisville Medical Department		(1915)	Kentucky
Baltimore University		(1899)	Maryland, Pennsylvania
College of Phys. and Surg., Baltimore		(1910), (1911)	W. Virginia
Maryland Medical College		(1912) Pennsylvania, (1913)	Maryland
University of Maryland		(1911) Maryland, (1918) (1921) New York	Delaware
Tufts College Medical School		(1915)	New York
St. Louis College of Physicians and Surgeons		(1905)	Penna.
Washington University		(1913)	Missouri
Albany Medical College		(1920)	New York
Columbia University		(1903), (1911), (1912) (1917) Pennsylvania, (1919), (1920, 3) New York	New York
Cornell University		(1911), (1912), (1917), (1920, 2)	New York
Fordham University		(1915), (1921, 2)	New York
Long Island College Hospital		(1911), (1921)	New York
New York Homeo. Med. Coll. and Flower Hosp.		(1918)	Delaware
University and Bellevue Hospital Medical College		(1916), (1920, 2), (1921, 2)	New York
Medical College of Ohio		1904)	New York
University of Oklahoma		(1915)	Oklahoma
Jefferson Medical College		(1896) Pennsylvania, (1903) (1908) Pennsylvania, (1919) North Carolina, (1920) Pennsylvania	Connecticut
Medico-Chirurgical College of Philadelphia		(1912) (1915) New York	Penna.
University of Pennsylvania		(1898) (1902), (1905), (1910), (1919) Pennsylvania	S. Carolina
University of Vermont		(1921)	Vermont
McGill University, Quebec		(1920)	New York
Queen's University, Ontario		(1902), (1918)	New York
Durham University, England		(1913)	Penna.
University of Budapest, Hungary		(1911)*	New York
University of Messina, Italy		(1905)*	Vermont
University of Naples, Italy		(1905)*	Penna.
University of Palermo, Italy		(1897)*	New York
Syrian Protestant College, Beirut		(1905)*	New York
Osteopaths		Missouri (3), Pennsylvania (1)	

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Harvard University		(1920)	N. B. M. Ex.
University of Pennsylvania		(1919)	N. B. M. Ex.

* Graduation not verified.

Book Notices

INJURY, RECOVERY AND DEATH, IN RELATION TO CONDUCTIVITY AND PERMEABILITY. By W. J. V. Osterhout, Professor of Botany. Cloth. Price, $2.50 net. Pp. 259, with 96 illustrations. Philadelphia: J. B. Lippincott Company, 1922.

The publication of this series of monographs on experimental biology is a great credit to American scholarship, and, what is of more importance, a great stimulus to the progress of biologic science. Since the medical sciences are of necessity based on biology, the furtherance of these fundamental studies is of immediate importance to medicine. The present volume is one that is of particular interest to the pathologist, for the contributions of the author to our knowledge of cell vitality mark an important step toward illuminating the most fundamental of all mysteries—What changes accompany and determine cell death. These studies are based on the observation that any injury to cells is accompanied by changes in the electrical resistance of the cells, falling steadily until a level is reached which indicates that death is complete. This makes it possible to study loss of vitality in a quantitative way, and quantitative measurements are the desired goal of all thorough students of biologic processes. Such quantitative studies corroborate the views held by many physiologists since the days of Claude Bernard, that the death process is one which is always going on, even in a normal, actively growing cell. The death process is a normal part of living, producing no disturbance unless unduly accelerated by some agent which upsets the normal balance and causes such injury that the life process comes to a standstill. The demonstration by Osterhout that fundamental life processes obey the laws of chemical dynamics, and the introduction of methods permitting the quantitative study of these processes, mark a contribution of value as much to medicine as to the underlying biologic sciences.

CARRIERS IN INFECTIOUS DISEASES. A Manual on the Importance, Pathology, Diagnosis and Treatment of Human Carriers. By Henry J. Nichols, M.D., M.A., Instructor in Bacteriology, Parasitology and Preventive Medicine, Army Medical School, Washington, D. C. With a Section on Carriers in Veterinary Medicine. By R. A. Kelser, D.V.M., M.A., in charge, Veterinary Laboratory, Army Medical School, Washington, D. C. Cloth. Price, $3. Pp. 184, with 11 illustrations. Baltimore: Williams & Wilkins Company, 1922.

This little book presents the subject of infection carriers in a systematic and didactic manner, without many historical or bibliographic details, and with special reference to the practical needs of physicians, health officers and medical students. Part 1 deals with general considerations; Part 2 with special human diseases; Part 3 with the relations of phorology, a new word suggested by the senior author, to preventive medicine; and Part 4 with carriers in veterinary medicine, a welcome and useful expansion of the consideration of carriers. The use of the word "case" as synonymous with patient—"cases have also been called acute carriers," "the case, confined to bed"—in the first three parts will be criticized, of course. Pasteur and Sternberg independently discovered the pneumococcus in normal human sputum in 1881, not, as on page 87, in 1890. The names of certain bacteria seem to be chosen somewhat at random; *Bacillus aerogenes-capsulatus* is used for *B. welchii* (gas bacillus), and no mention seems to be made of the occurrence of either this bacillus

or the tetanus bacillus in the human intestine. Slips like these do not lessen the practical usefulness of the book, the teachings and recommendation of which are valid and wholesome. Its reading will broaden the understanding of the vast importance of carriers in the spread of infection, and help the physician in his responsible relations to their prevention and cure.

A TEXT-BOOK ON MINOR SURGERY. By John C. Vaughan, M.D., Director and Visiting Surgeon, Beckman Street Hospital, and Athel Campbell Burnham, M.D., in Charge of the Medical Department of Red Cross in Poland. Cloth. Price, $7.75. Pp. 627, with 459 illustrations. Philadelphia: Lea & Febiger, 1922.

The authors state that minor surgery has advanced very rapidly in the past decade. This is due, according to them, to the industrial clinic, workers' compensation insurance, the use of local anesthesia, and the realization of economic and deforming complications, resulting from poorly treated or neglected conditions. Consideration is given especially to fractures, dislocations, and injuries and inflammations of the extremities. Various parts of the body are taken up and considered separately, including tumors and deformities. There are separate chapters on conditions of the generative organs of the male and female, bandaging, local anesthesia, and surgical technic. Surgical dressing and operating rooms of their ambulatory clinic are described as being similar to those in the best equipped hospitals. Under these ideal conditions, they perform breast amputations, excepting a radical dissection, operations for epithelioma of the lip, thyroglossal sinus and patent urachus, and a large number of operative procedures on bones and joints. However, some of the operations described should not be done in any ambulatory clinic, for they are far from being minor in any surgical sense of the word. Numerous conditions described require the most experienced surgical judgment, combined with careful hospital care, to prevent deformities, an economic waste of time, and not infrequently a loss of life. On page 567, there is a serious error in the strength of a solution of procain, 5 grams to the ounce of water being mentioned instead of 5 grains. The book is well written, however, unusually well illustrated, and covers a field not extensively covered in the average book on general surgery. It is practical, and is evidently based on well-founded experience.

DIE PFLANZENALKALOIDE. Von Dr. Richard Wolffenstein, A. O. Professor an der Technischen Hochschule zu Berlin. Third edition. Cloth. Price, $4. Pp. 506. Berlin: Julius Springer, 1922.

This book treats of the theoretical chemistry of the alkaloids, and some attention is given to their pharmacologic properties. The treatment of the chemical constitution is not so complete or satisfactory as is given in other works, some of which are published in English and some in German. The discussion of the pharmacologic properties is too brief to be of much value to the physician, although doubtless it would serve a useful purpose to teachers of chemistry. Very little information is given which will be of value to analysts. It is unfortunate that an author should undertake to write a work on alkaloids which does not aim to give more information than has been given in previous books. In view of the excellent books already on the market which treat the subject more fully, this book cannot be recommended.

MODERN METHODS IN THE DIAGNOSIS AND TREATMENT OF RENAL DISEASE. By Hugh Maclean, M.D., D.Sc., Professor of Medicine, University of London. Cloth. Price, $2. Pp. 102, with 4 illustrations. Philadelphia: Lea & Febiger, 1922.

This monograph was especially designed to give information, in such form as to be usable by the general practitioner, on the renal function tests that have been developed during recent years. Little emphasis is laid on symptoms, although the author points out that clinical observation should precede the application of functional tests. An excellent chapter deals with the significance of albuminuria and casts. In accordance with current beliefs, the author finds the Ambard coefficient method of little clinical value. He is inclined to favor the diastatic test, and considers the phenolsulphonephthalein test difficult of application as it usually requires a colorimeter. For those especially interested in securing a brief presentation of the modern point of view in the handling of renal disease, this book may be especially recommended.

Miscellany

HEALTH PROBLEMS IN NEW YORK STATE

The committee appointed by the governor of the state of New York, Feb. 26, 1923, to consider certain health problems in that state has issued a report that deserves the most careful consideration, especially as it offers conclusions that do not always conform with those of the state department of health. Each of the several problems was studied by a subcommittee, and the conclusions and recommendations, here given in abstract, were adopted by the committee as a whole.

THE RURAL HEALTH PROBLEM

It is undoubtedly true that, in a certain small number of outlying rural communities in this state, there is a lack of physicians, particularly in the winter time; but it is doubtful in the extreme whether state subsidies would correct the situation in those communities. The number of physicians in a given county is governed by the laws of economics; and any decrease in this number is generally explained by lessened population, lessened morbidity and mortality, and the individual physician's ability to care for a greater number of patients than formerly, owing to the automobile, the telephone and the increased number of good roads. It is evident that the disproportion between the number of physicians in rural centers now and in the past is not so great as a superficial survey of the statistics would seem to indicate. Certainly there is no indication for the adoption of a state subsidy program.

There is another aspect to the rural health problem in the question of hospital, nursing and laboratory facilities in country communities. There is no question that, for the benefit of public health, it is absolutely essential that these facilities exist in number and position to be promptly available in every instance when needed. In the interest of public health, therefore, the state department of health should inaugurate an extensive educational campaign to urge local county authorities to meet their own needs. Experience teaches that local control and local support produce the best results in this field. Should isolated instances be found in which, for one reason or another, this is not possible, then, and only then, should subsidy and central control be considered.

MEDICAL RESEARCH

The methods employed in medical research have encountered a great deal of active opposition from a small, but aggressive, minority within the state. Despite the fact that investigation in the great scientific institutions of the day has resulted in benefits of untold value to the human race, this small group has consistently sought to hamper scientific research by restrictive legislation of various kinds.

It is the opinion of the committee that the laws surrounding the conduct of laboratories for research and investigation are adequate, from the point of view of humanitarianism as well as of regulation, and there is no need for any modification of, or addition to, the existing statutes.

MEDICAL EDUCATION

During the last twenty years, the science of medicine has made tremendous progress in America, and today we lead the world in medical research and in the prevention and cure of disease. This has been accomplished by adopting and maintaining high standards of medical education and practice. Despite these high requirements, there are sufficient physicians in the United States, though in many parts of the country the distribution is not satisfactory. In order that progress in medical science may be continued, it is vital that our educational standards be rigidly maintained.

The committee therefore recommends that: (1) the present educational requirements as they relate to the practice of the healing art be maintained; (2) the present laws being necessary and satisfactory to enforce a high standard of service, they be in no way modified; (3) no exceptions, exemptions or provisions in any respect invalidating the present laws be enacted. The medical profession is not

opposed to the practice of the healing art by any school, cult or method—even though in opposition to its own teachings—provided these would-be practitioners have the same preliminary training as the doctors of medicine.

THE MEDICAL PRACTICE ACT

Whatever our public health laws are to be, they must be enforced against all who violate them, not only because of the direct benefits to the public health, but also because of the broader aspect of the situation in connection with respect for the law generally. Even if cults are to be licensed—and to this, under proper regulation, we are not opposed—the public, for whose protection the laws are enacted, is entitled to know that only such individuals as are qualified under the law by education and training shall be entrusted with their health and lives, and that all others, whoever they may be and whatever theories they may hold, may not prey on their credulity and ignorance of the healing art.

It is submitted that the principal reason behind the apparent lack of efficient and effective enforcement of the medical practice act lies in the fact that there is no state organization whose function it is to enforce the act. The medical societies are rendered impotent because of the suspicion of selfish interest which is attached to their enforcement activities, and the state does not act.

With these facts in mind, the committee recommends the enactment of a bill providing that the entire matter of enforcement be placed in the control of the attorney-general's office, to be directly in charge of a deputy attorney-general appointed for the purpose.

THE NARCOTIC DRUG PROBLEM

No question has come before the committee of more importance, or has received more serious study, than that of narcotic drug addiction and its control. Thorough investigation established the fact that the ambulatory treatment of drug addicts is worse than useless. Not only does it fail to cure addiction, but, in many cases, it is an impetus to its continuation.

Contrary to popular belief, the majority of narcotic habitués are criminals, with criminal records in the courts. In fact, narcoticism is so involved with criminality that to relax police vigilance over the one is to enhance the other. All drug addicts should, therefore, undergo institutional confinement, the criminal addict in penal institutions and the non-criminal addict in state-licensed and supervised public or private institutions. It is the sense of the committee that the criminal addict was a criminal prior to his addiction, or was arrested in some criminal act. When a criminal addict is confined in a penal institution, he should be placed under medical treatment.

PNEUMOTHORAX

Hygienic Laboratory Bulletin 132, issued by the U. S. Public Health Service, contains the report of a study by Barlow and Thompson. They investigated the causes of irregularities in the physical signs and clinical course of tuberculosis, and the discrepancies between these and the roentgen-ray appearances, and found that the most common cause of the irregularities mentioned is the presence of air in small pockets caused by the irregular pleural adhesions that are almost invariably present. The small pneumothoraces cause certain changes in the physical signs, and permit collapse of the most severe lesions. They modify the clinical course of the disease, giving rise to local pain, discomfort, and to various reflex symptoms, by causing tension on the pleura.

These areas are difficult to recognize in roentgenograms except when stereoscopic plates are used. The smaller ones tend to fill with fluid before death, and, even if present, are difficult to demonstrate at necropsy. This demonstration has been made in a number of cases, however, both by Barlow and Thompson and by other pathologists.

The first series of cases studied number 1,000, and from the other series mentioned in the study of special symptoms, it is evident that the authors must have studied several thousand cases. Some of the studies of symptoms, such as dilatation of the pupils, the study of the blood pressure, the chapters on premanifest tuberculosis and reflex symptoms from the diaphragmatic pleura would, in themselves, be sufficient for special research articles. While it does not appear that any changes are made in the usual diagnosis and treatment of tuberculosis by this study, it is evident that the work clears up many things that have heretofore been puzzling. It should make the diagnosis of tuberculosis more certain in many doubtful cases, and be of value in guiding the treatment; it will help determine which of the quiescent and apparently arrested cases are most likely to relapse after the patient has been permitted to return to ordinary life.

There is a tendency for diseased lung to collapse as far as permitted by the elastic tension within the thorax. This observation led Barlow and his collaborators to apply the principal of "selective collapse" in artificial pneumothorax. They found that air introduced into the free pleural cavity became localized at the site of the lesions. If a partial artificial pneumothorax is maintained within the chest, it has the same effect in improving the clinical symptoms and modifying the course of the disease as is sometimes produced by a spontaneous small pneumothorax. The application of this method was first described by Morgan in April, 1917, but the studies carried out at New Haven seem to have brought out more clearly the need for unremitting attention in its use.

Medicolegal

Requirements—Liability for Malpractice—Evidence

(Berkholz v. Benepe (Minn.), 190 N. W. R. 800)

The Supreme Court of Minnesota says that a surgeon is not to be held negligent simply because results are bad. A plaintiff in a malpractice case must show that the poor result was due to negligent or unskilful treatment. The law requires a physician or surgeon to exercise only the care and professional skill usually exercised by the ordinary member of his profession in good standing. He is to be judged as to treatment only by the standard of the medical school to which he belongs. Ordinarily, the question whether the treatment was negligent cannot be determined by a jury of laymen without the aid of the opinion of medical experts. The surgeon is not responsible for the consequences of an honest mistake or error of judgment in his diagnosis or treatment when there is doubt as to what should be done in accordance with recognized authority and current good practice.

The plaintiff fractured both bones of his right leg a few inches above the ankle. He was taken to a hospital, and his employer called the defendant to attend him. Immediately, a cast was placed on the leg by the defendant, who attended the plaintiff for about two months, when the last cast was removed. Then, and at a previous time when the leg was bared, the plaintiff called the defendant's attention to a lump at the place of fracture, but was assured that it would disappear within two years. The plaintiff was not satisfied, and complained to his employer, who sent him to another physician. The latter advised an immediate operation, by breaking and resetting the fractures. This was done, and in about six months thereafter there was a serviceable leg. The evidence indicated that the fracture of the tibia was oblique. Good surgery required care in so setting and holding the bone that the broken ends would be likely to remain in apposition. Negligence in respect thereto was charged against the defendant, particularly in that he took no roentgenograms to aid in the diagnosis of the fracture or in ascertaining its condition during the curative process; he did not make use of a fracture box; the casts put on did not extend above the knee, and he did not use extension weights.

The plaintiff recovered a verdict against the defendant for $3,500, which by the plaintiff's consent was reduced to $1,800, as the alternative of having a new trial granted. Still, the verdict as reduced was assailed as excessive; but the supreme court does not think that it was, and affirms a judgment for

that amount. The defendant testified that a fracture of this sort ought to be cured in about eight or ten weeks. The plaintiff because of the defendant's negligence was incapacitated for an additional period of six months. It was true that his hospital and doctor's bills were paid, and the damages for loss of time were in a measure lessened to him because of the benefits of the workmen's compensation act; but the benefits so received did not go to mitigate or reduce the damages for additional lost time properly attributed to the defendant's negligence. The benefits derived under the compensation act can well be placed, at least as to wrongdoers, subsequent to the injury, in the same class as insurance carried by the injured party, which has been held not to mitigate the damages for which the wrongdoer is liable. But the loss of wages and the pain and suffering during the additional period required for a recovery because of the defendant's failure to use proper care and skill was considerable, and the supreme court is unable to say that the verdict as reduced was excessive.

There is in Minnesota no statute limiting medical experts to persons licensed to practice in the state. In the absence of such statute, it would seem clear that a graduate from any reputable school of medicine and surgery may qualify as an expert. The extent of his practice or want of practice affects merely the weight of his testimony.

Diagnosis May Be Established by Acts and Conduct

(People v. Parish (Calif.), 210 Pac. R. 633)

The District Court of Appeal of California, Second District, Division 2, says that the defendant, who was convicted of practicing a mode of treating the sick and afflicted without a license, urged, as a ground for reversal, that the evidence failed to disclose any diagnosis of disease by him, and that one who does not diagnose does not practice medicine, within the meaning of the medical practice act of California of 1913. He was entirely correct as to this proposition of law (*People v. Jordan*, 172 Cal. 399, 156 Pac. 451). He stressed the point that he at no time made representations to those seeking treatment as to the nature of their various ailments, or that he would cure them. This fact was offered to show an entire lack of diagnosis. But diagnosis may be established by acts and conduct as well as by any representations that might be made to a patient. The Jordan case has decided that it is impossible to dissociate diagnosis from the practice of the art of healing by any physical, medical, mechanical, hygienic or surgical means. There was evidence in this case that the defendant used physical means in adjusting the vertebrae of witnesses. Hence, under the Jordan decision, the jury might lawfully have drawn the inference that the defendant made a diagnosis in connection with the treatment of one witness. However, the judgment of conviction must be reversed on account of the giving of an instruction which, in effect, assumed that the defendant had tried to convince the jury that he had attempted to secure a license, and had been discriminated against, when there was nothing in the record to show that he had ever attempted to secure a license to practice chiropractic or any other system of healing, or that his counsel had ever attempted to suggest that such a license could not be procured, or that the board of medical examiners had ever discriminated against him.

Acute Case of Pellagra Not a Chronic Disease—Privileged Communications

(National Benevolent Society v. Barker (Ark.), 244 S. W. R. 720)

The Supreme Court of Arkansas, in affirming a judgment in favor of Mrs. Barker, the plaintiff, for the full amount of a certificate issued by the defendant society insuring the life of her daughter, says that, under the provisions of the certificate and by-laws of the society, the society was liable for only 10 per cent. of the face value of the certificate if the insured died of a chronic disease. There was evidence tending to show that she died from the effects of an acute case of pellagra. An acute disease, according to Webster, is one "attended with symptoms of some degree of severity and coming speedily to a crisis—opposed to chronic; and a chronic disease is one "continuing for a long time; lingering, habitual." Under this definition, an acute case of pellagra would not come within the liability exemption clause in the policy and by-laws of the society.

In the course of the trial, the court permitted the plaintiff to show the cause of the insured's death by a physician who was called to see her in the month in which she died, but refused to permit the defendant to prove the cause of her death by her general attending physician in her last illness. The evidence of the latter physician was excluded because the information elicited was information acquired by him while attending the insured in a professional character. Such information is a matter of privilege under the Arkansas statute, and cannot be introduced in evidence without the consent of the patient or the patient's representative. It was urged by the defendant that the plaintiff waived the right to object to the tesimony of his physician relative to the condition of the insured because she herself introduced the testimony of the other physician concerning the insured's condition. This court has decided otherwise.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.

American Association for Thoracic Surgery, Chicago, May 28-29. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City.

American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.

American Bronchoscopic Society, Atlantic City, May 9. Dr. William B. Chamberlin, Osborn Building, Cleveland, Secretary.

American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.

American Gastro Enterological Association, Atlantic City, April 30-May 1. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.

American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.

American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.

American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia.

American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.

American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.

Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

Georgia, Medical Associaton of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.

Hawaii, Medical Society of, Honolulu, April 28-30. Dr. W. K. Chang, Honolulu, Secretary.

Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.

Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.

Louisiana State Medical Society, New Orleans, April 24-26. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maine Medical Association, Houlton, June 5-7. Dr. B. I. Bryant, 265 Hammond Street, Bangor, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore.

Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.

Missouri State Medical Association, Joplin, May 8-10. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.

Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.

New Hampshire Medical Society, Concord, May 23-24. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.

North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.

Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.

Rhode Island Medical Society, Providence, June 7. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.

South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.

Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.

Western Electro-Therapeutic Association, Kansas City, Mo., April 19-20. Dr. Charles Wood Fassett, 115 E. 31st Street, Kansas City, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

March, 1923, **25**, No. 3

*Value of Basal Metabolism in Diagnosis and Treatment of Cretinism. F. B. Talbot and M. E. Moriarity, Boston.—p. 185.
*Bacteriology of Urine in Acute Nephritis in Children. L. W. Hill, E. F. Hunt and E. W. Brown, Boston.—p. 198.
*Intraperitoneal Transfusion with Citrated Blood. A Clinical Study. D. M. Siperstein, Minneapolis.—p. 202.
Polycystic Disease of Kidneys. Report of Case in Infant. A. Tow, New York.—p. 222.
*Lead Poisoning in Infancy. L. E. Holt, Jr., Baltimore.—p. 229.
*Types of Organism Found in Series of Tuberculous Children. J. K. Gordon and E. W. Brown.—p. 234.
Calcium Absorption in Children on Diet Low in Fat. L. E. Holt and H. L. Fales, New York.—p. 247.

Value of Basal Metabolism in Diagnosis and Treatment of Cretinism.—Talbot and Moriarty show, first, that determinations of the basal metabolism make possible an early diagnosis of cretinism, before the usual clinical symptoms appear; second, the correct standard to use in childhood in determining whether a subject is suffering from hypothyroidism or not, and third, that determinations of the basal metabolism are of distinct value in indicating the amount of thyroid which may be given with maximum efficiency. The basal metabolism findings in a series of ten cretins are given, and it is shown that the basal metabolism and physical development of a cretin before treatment are considerably lower than they should be, illustrating the importance of the thyroid gland as a growth promoting factor. The metabolism of the untreated and treated cretins is plotted for comparison with the normal, showing the heat production for each square meter of body surface, total calories referred to weight, and total calories with reference to age. In the majority of cases studied, the most marked clinical improvement was not obtained until enough thyroid had been given to raise the metabolism to the expected metabolism for the age. Since the purpose of treatment in cretins is to bring them up to the average normal for the age, it seems wise to give sufficient thyroid to bring the metabolism to the expected total metabolism for the age. The evidence to date is that this level must be reached before the best therapeutic results can be obtained.

Bacteriology of Urine in Acute Nephritis in Children.—Twenty-one cases were studied by Hill, Hunt and Brown. In every instance the disease was in the acute stage, that is, the urine showed large amounts of blood, in almost all cases macroscopically. Cultures of the urine were obtained from three days to a month after the onset of the disease, and in about 50 per cent. of the cases, within a week after the onset. In sixteen cases, the urine was sterile. In two cases, *Staphylococcus albus* was found (probably a contamination), a diphtheroid bacillus in one case (unaccounted for), and colon bacilli in two cases. The cases which showed colon bacilli had high leukocyte counts (17,800 and 29,000), with a good deal of pus in the urine, as well as blood and casts, due probably to a complicating pyelitis. These results are said to indicate that in most cases of acute nephritis in children, after the disease has once been established, bacteria are not demonstrable in the urine, and there are probably none in the kidney. There is no fever, no elevation of the leukocyte count; in short, there is probably no bacterial infection of the kidney present during the course of the disease. However, these results do not rule out the possibility of bacterial infection of the kidney at the very onset of the disease, and this is a very strong possibility. The other possibility is that not bacteria, but soluble toxins absorbed from the infected focus (tonsils, cervical glands, etc.) produce the injury to the glomeruli.

Intraperitoneal Transfusion with Citrated Blood.—Siperstein resorted to the use of this method in cases of secondary anemia, congenital syphilis, dehydration, decomposition, and hemolytic anemia, hemoglobinuria. Among the five cases reported, favorable results were obtained in three. The intraperitoneal transfusion of citrated blood is simple to apply, practical and efficient. The intra-abdominal route should, if possible, not be the method of choice in emergency cases. When the anterior fontanel is closed, and surgical exposure of a vein is difficult, this new avenue of approach is suggested.

Lead Poisoning in Infancy.—Holt reports the case of a child, aged 8 months, which presented symptoms of lead poisoning—not very characteristic or pathognomonic—in which the source of the lead was a proprietary "diachylon compound" ointment (the chief constituent was lead acetate) which the mother had been using for a mild eczema of one of her breasts. The ointment had been applied continuously, except when the child was actually nursing. It was then wiped off, to be reapplied immediately afterward.

Types of Organism Found in Series of Tuberculous Children.—In a total of thirty cases of tuberculosis in children under the age of 12 years, examined by Gordon and Brown, the bovine organism was identified in ten instances. There was a greater actual incidence of bovine infection in the children under 5 years of age, although the number of bovine cases in patients between the ages of 5 and 12 years was relatively greater. Moreover, in the infants under 1 year of age, the bovine organism was identified only in a single instance. Twenty-two of the total number of cases were known to be fatal. Of these, four were of the bovine type. Permission for necropsy was obtained in twelve of the fatal cases. Of this number, the cases in which the point of origin of infection was found in the alimentary tract proved to be, without exception, bovine in type. The human bacillus was recovered from all those cases in which the point of origin, at necropsy, was in the respiratory tract. In five cases out of the total number, the history indicated that the children were exclusively breast fed. The reliability of this statement on the part of the parents may be regarded as doubtful, for although four of this number showed a human type of infection, the bovine organism was recovered in one instance. In seven cases of the total number a definite history of either familial tuberculosis or contact with tuberculous persons was obtained. Six of these proved to be cases of infection with the human and one with the bovine organism. In the latter instance, the patient had been infected by a younger brother who had previously died of generalized tuberculosis.

Annals of Clinical Medicine, Baltimore

January, 1923, **1**, No. 4

*Elective Localization of Streptococcus-Pneumococcus Group as Factor in Production of Disease. E. C. Rosenow, Rochester, Minn.—p. 211.
Disseminated Sclerosis. J. Loudon, Toronto.—p. 231.
Radiographic Diagnosis of Tuberculosis Pulmonalis. A. N. Sinclair, Honolulu, H. I.—p. 240.
*Incidence of Goiter in College Students (Women). R. P. Guilder, Chicago.—p. 248.
Chemistry and Pharmacologic Action of Thyroxin. E. C. Kendall, Rochester, Minn.—p. 256.
Clinical Features of Thyroid Disease. W. A. Plummer, Rochester, Minn.—p. 259.
*Larynx in Diseases of Thyroid. G. B. New, Rochester, Minn.—p. 262.
End Result of Surgery of Thyroid. J. J. Pemberton, Rochester, Minn.—p. 266.
*Heart in Thyroid Disease. F. A. Willius, Rochester, Minn.—p. 269.
Clinical Value of Pathologist. W. C. MacCarty, Rochester, Minn.—p. 270.

Elective Localization of Streptococcus-Pneumococcus Group as Disease Factor.—Rosenow is convinced that in the light of the results of experiments with animals and the results obtained by numerous clinicians by the removal of foci of infection, there can be no doubt of the importance of the specific localizing power of bacteria and of foci of infection in the causation of many diseases.

Incidence of Goiter in College Students.—Examination of 609 women students at the University of Illinois revealed an enlarged thyroid in 276 instances (45.3 per cent.). The condition occurred with the greatest frequency in the youngest students, the highest percentage being 66.6 at 16 years of age. Of the 276 students showing an enlarged thyroid, 199 had spent their childhood in Illinois. The distribution of these 199 cases by the county shows that 55 per cent. of the children who had spent their childhood in Cook County showed an enlargement of the gland, and that the number of counties in which no students had shown enlargement was much

greater in the southwestern portion of the state than in the region nearer Lake Michigan.

Larynx in Diseases of Thyroid.—A mistaken idea with regard to patients with goiter, New says, is that if the voice is normal, the cords are not paralyzed. A patient's voice may be virtually normal and yet both recurrent laryngeal nerves be completely paralyzed. Hence the importance of a preoperative examination of the larynx in diseases of the thyroid cannot be overestimated as a protection to the physician and patient. The number of cases of serious paralysis of the laryngeal nerve after thyroidectomy is small, and in these cases the cords are in the so-called bilateral abductor position. The theories as to the cause of the bilateral abductor position of the cords are varied. The most common explanation is that the abductor fibers of the recurrent laryngeal nerve have been injured at operation or by secondary scarring and that the adductor fibers bring the cords to the middle line position. It would seem probable that this position of the cords following thyroidectomy is due to the action of the muscles of the larynx which are supplied by the superior laryngeal nerve. The cricothyroids, the external tensors, abduct the cords and the arytenoids adduct them; the resulting position would produce in these patients a voice characteristic of that following injury to the recurrent laryngeal nerve. Experimentally, New has been unable as yet to prove this, but clinically it seems to be the true explanation.

Heart in Thyroid Disease.—At the time of initial examination at the Mayo Clinic, auricular fibrillation is found in 7 per cent. of patients with exophthalmic goiter and in 9 per cent. of patients with hyperfunctioning adenoma. These percentages are doubled while the patient is under observation, that is, during the preoperative, operative and postoperative periods. New states that auricular fibrillation may occur as a permanent, intermittent, or paroxysmal disorder.

Annals of Medical History, New York

December, 1922, **4**, No. 4

"Liber De Medicinis Espertis" Attributed to Galen. E. Wickersheimer, Strasburg, France.—p. 323.
Medicine and Humanities. C. L. Dana, New York.—p. 328.
William Heberden, M.D., F.R.S. P. B. Davidson, Boston.—p. 336.
Christopher Widmer. M. Charlton, Montreal.—p. 346.
Sixteenth Century Latin Poem on Diseases of Nurslings: "Paedotrophia," by Scevole De Sainte-Marthe. C. G. Cumston, Geneva, Switzerland.—p. 351.
Guy Patin and Medical Profession in Paris in Seventeenth Century. F. R. Packard, Philadelphia (concluded).—p. 357.

Archives of Dermatology and Syphilology, Chicago

March, 1923, **7**, No. 3

Certain Dermatoses of Monkeys and an Ape. Pemphigus, Scabies, Sebaceous Cyst, Local Subcutaneous Edema, Benign Superficial Blastomycotic Dermatosis and Tinea Capitis and Circinata. F. D. Weidman, Philadelphia.—p. 289.
*Granuloma Inguinale. I. M. Gage, New Orleans.—p. 303.
Case of Dermatomyositis. H. Joachim, Brooklyn.—p. 326.
*Pathogenesis of Mercurial Stomatitis. Review of Literature on Mercury Poisoning. D. H. Bessesen, Minneapolis.—p. 332.
Concerning Specificity of Cholesterinized Antigens in Serologic Diagnosis of Syphilis. R. A. Kilduffe, Pittsburgh.—p. 363.
Calcification of Skin, with Unusual Findings. R. R. Ducasse, Cincinnati.—p. 373.
Institutional Epidemics of Bullous Impetigo Contagiosa in Infants. F. C. Knowles and H. G. Munson, Philadelphia.—p. 376.
Histopathology of Cutaneous Tests. Second Communication. A. Strickler and E. J. Asnis, Philadelphia.—p. 379.

Granuloma Inguinale.—Gage states that granuloma inguinale occurs in the United States, being endemic in some states, especially in the extreme Southern states. It is endemic in Louisiana. The cause is probably the organism described by Donovan, possibly a protozoon. The disease presents definite clinical symptoms which extend over long periods. The symptoms vary somewhat in different persons, for the most part, showing a typical granuloma with a serosanguineous discharge. The pathologic picture is that of a sclerosing granuloma. Tartar emetic administered intravenously seems to be specific, although when the lesions are accessible to surgical excision, Gage says this procedure, combined with tartar emetic, will considerably shorten the healing time.

Mercurial Stomatitis.—The nine principal theories of the action of mercury on the body are summarized briefly by Bessesen. The essential literature on the pathology of mercury poisoning is analyzed under the system of organs affected, in order to see whether the known facts indicate any general underlying effects which might be involved in local lesions, such as those that occur in the mouth. It is evident that there are distinct indications of blood and circulatory changes which must be taken into consideration in discussing any local lesion. The results of examining a large number of sections from tissue taken from cats and ferrets with mercury lesions are recorded. These results and their interpretations are fully in harmony with those deducted from an extensive review of the literature. Finally, in connection with the pathogenesis of mercurial stomatitis, Bessesen believes that the general systemic action is answerable for the lesions in the same degree as the local changes.

Boston Medical and Surgical Journal

March 8, 1923, **188**, No. 10

*New Operation for Correction of Retroflexion of Uterus. J. W. Keefe, Providence, R. I.—p. 299.
Carcinoma of Cervical Stump. Report of Eight Cases. L. Davis, Boston.—p. 304.
Compulsory Vaccination in Private Schools. S. B. Woodward, Worcester, Mass.—p. 309.
*Treatment of Pertussis by Roentgen Ray. H. I. Bowditch and R. D. Leonard, Boston.—p. 312.

March 15, 1923, **188**, No. 11

Progress in Study and Treatment of Cardiovascular Disease in 1922. Part I. P. D. White, Boston. (To be continued.)—p. 331.
*Leiomyoma of Stomach. Report of Case. E. L. Hunt, Worcester, Mass.—p. 349.
Esophageal Diverticula. Report of Case. F. H. Lahey, Boston.—p. 355.
Case of Diverticulum of Esophagus. L. C. Kingman, Providence, R. I.—p. 361.

New Operation for Correction of Retroflexion of Uterus.—This operation was described in THE JOURNAL, Oct. 21, 1922, p. 1452.

Treatment of Pertussis by Roentgen Ray.—A series of twenty-six cases of active pertussis were given roentgen-ray treatment by Bowditch and Leonard. The ages of the patients varied from 3 months to 40 years. The patients were in different stages of the disease, varying from one to ten weeks. Each patient received three or four applications of the roentgen ray at intervals of two or three days. The dosage was regulated according to the age of the patient and the total amount of roentgen ray given to any one patient was well under an erythema dose. There has resulted definite improvement in these patients which the authors state cannot be explained by mere accident. In a small percentage of these twenty-six cases after two or three applications of the roentgen ray covering a period of six days, the spasms and whoops entirely disappeared and the patients were clinically well, except for possibly a very slight cough. The bulk of the patients were "relieved." There was a gradual diminution in the number of spasms.

Leiomyoma of Stomach.—Hunt reviews the literature and adds one personal case in which the chief complaint was heartburn, hematemesis and bloody dejections. After roentgen-ray examination a diagnosis of duodenal ulcer was made. Operation was advised and accepted. A rounded, comparatively smooth, mass, the size of a lemon, was found above the pylorus extending under the liver. The first portion of the duodenum was indurated and apparently part of the mass. Pylorectomy, followed by a posterior isoperistaltic gastrojejunostomy, was carried out. The entire growth had somewhat the shape of a uterus though a little larger. It projected into the lumen of the duodenum by a rounded nodule, the central portion of which was ulcerated away so as to resemble an os uteri. In consistency it resembled the uterine myoma and on section it showed bands and whorls of parallel and interlacing striae. Microscopically, it consisted of bundles of spindle cells of rather uniform size, each having an elongated vesicular nucleus and acidophil protoplasm without visible intracellular substance. Eleven months after this operation, the patient was reexamined. Examination of the abdomen disclosed a rounded tumor in the epigastrium, about the size of a hen's egg and not adherent to the scar, evidently a recurrence. Operation was advised and rejected.

California State Journal of Medicine, San Francisco

February, 1923, **21**, No. 2

Hypertension. D. D. Comstock, Los Angeles.—p. 49.
Associated Syphilis and Tuberculosis, More Particularly as They Affect the Lungs. A. L. Brankamp, Banning.—p. 52.
*Bilateral Malignancy of Testes. C. O. Tanner, San Diego.—p. 55.
Glioma of Retina. Case Report. H. L. Gregory, Stockton.—p. 56.
Psychotic Sequelae of Epidemic Encephalitis. R. L. Richards, San Francisco.—p. 56.
Diagnosis and Surgical Treatment of Malignant Tumors of Kidney. W. E. Stevens, San Francisco.—p. 60.
Origin and Application of Pirquet Nem System of Child Feeding Under Hoover Relief Administration of Austria. H. M. Coulter, South Pasadena.—p. 62.
Present Status of Therapy in Pulmonary Tuberculosis. W. C. Voorsanger, San Francisco.—p. 65.
Indications for and Results of Anchoring Head of Colon. O. O. Witherbee, Los Angeles.—p. 69.
Physiologic Effects of Nitrous Oxid. N. C. Trew, Los Angeles.—p. 70.
Study of Basal Metabolic Rates in Fatigue States. R. Cummings, Los Angeles.—p. 77.

Bilateral Malignancy of the Testes.—Tanner records the case of a man, aged 45, who had a carcinoma of both testes. A double orchidectomy was done with removal of almost the entire scrotum. The patient died three months afterward with numerous metastases. These cases are said to be exceedingly rare. As a rule, the disease is limited to one testis.

Illinois Medical Journal, Oak Park

March, 1923, **43**, No. 3

Relations of Nose to Eye and Ear. B. F. Andrews, Chicago.—p. 195.
Surgical Reconstruction of Paralytic Upper Extremity. A. Steindler, Iowa City, Iowa.—p. 197.
Two Cases of Placenta Previa in Which Cesarean Section was Done. J. A. Fisher, Metropolis.—p. 199.
Ductless Glands in Relation to Certain Dermatoses. M. L. Ravitch, Chicago.—p. 201.
Treatment and Results in Fractures. J. M. Dodd, Ashland, Wis.—p. 203.
Effects of Roentgen Rays and Radium Rays in Malignancy. H. Swanberg, Quincy.—p. 205.
Symptoms and Treatment of Deviations of Nasal Septum. E. E. Edmonson, Mt. Vernon.—p. 208.
Neoplasms of Larynx. C. M. Robertson, Chicago.—p. 210.
Injection Treatment of Hemorrhoids. W. A. Hinckle, Peoria.—p. 217.
Glaucoma Surgery. M. Goldenburg, Chicago.—p. 219.
Splitting the Cord in Indirect Inguinal Hernias. C. B. Ripley, Galesburg.—p. 223.
Diet During Pregnancy. E. Cary, Chicago.—p. 228.
Nitrous Oxid and Oxygen in Obstetrics. A. E. Rives, East St. Louis.—p. 230.
Case of Paget's Disease Involving the Ears, Nose and Mouth. G. W. Boot, Chicago.—p. 235.
Basic Principles of Deep Roentgen-Ray Therapy. L. S. Goin, Peoria.—p. 237.
Tuberculin as Therapeutic Agent in Certain Forms of Keratitis. W. G. Reeder, Chicago.—p. 241.
Tapeworm Segments Discharged Through Fecal Fistula Following Operation for Appendicitis and Calculous Suppurative Cholecystitis. A. P. Heineck, Chicago.—p. 245.

Iowa State Medical Society Journal, Des Moines

March, 1923, **13**, No. 3

Facing the New Day in Medicine. A. P. Stoner, Des Moines.—p. 79.
*Occlusion of Central Retinal Artery. F. F. Agnew, Independence.—p. 83.
Market Milk from Medical Standpoint. F. G. Murray, Cedar Rapids.—p. 87.
Diagnostic Surveys by Diagnostic Commissions for Asylum Populations. C. A. L. Reed, Cincinnati.—p. 94.
Aids to Diagnosis in Medicine. H. E. Tuley, Louisville.—p. 97.
Actinomycosis: Diagnosis and Treatment. P. A. White, Davenport.—p. 105.

Occlusion of Central Retinal Artery.—Agnew's patient was 58 years of age. He first noticed a blur in his right eye, which after a few minutes developed into total blindness of the eye. Ophthalmoscopic examination showed a collapsed temporal branch of the superior retinal artery, the point of obstruction being about one disk diameter from the origin of this branch. The obstruction was complete and the remainder of the artery appeared as a glistening white streak. Approximately one fourth of the total area of the retina, including the macular field, was blanched in the center, fusing into a pale pink as it approached the portion normally supplied with blood. The character of the obstructing object was not determined. Treatment was immediately begun with massage of the eyeball, cathartics, heat and iodids. Progress was fair and at the end of a month he was able to read coarse print with his correction. When last seen, his condition had not improved. More and further treatment was considered useless. In a second similar case treatment was of no avail.

Johns Hopkins Hospital Bulletin, Baltimore

February, 1923, **34**, No. 384

*Existence of More Than Four Iso-agglutinin Groups in Human Blood. C. G. Guthrie and J. G. Huck, Baltimore.—p. 37.
Blood Pressures in Unanesthetized Dog. A. C. Kolls and J. R. Cash, Baltimore.—p. 49.
*Iso-agglutination in New-Born Infants and Their Mothers. Possible Relationship Between Interagglutination and Toxemias of Pregnancy. I. McQuarrie, Baltimore.—p. 51.
Periodic Variations in Spontaneous Contractions of Uterine Muscle, in Relation to Oestrous Cycle and Early Pregnancy. J. D. Keye, Baltimore.—p. 60.
Preparation of Nucleotides from Yeast Nucleic Acid. W. Jones and M. E. Perkins, Baltimore.—p. 63.
*Effect of Antiseptics on Bacterial Flora of Upper Air Passages. A. L. Bloomfield, Baltimore.—p. 65.
Hypoglycemia in Exophthalmic Goiter. E. F. Holman, Baltimore.—p. 69.

Existence of More Than Four Iso-Agglutinin Groups in Human Blood.—Guthrie and Huck report the case of a patient whose blood serum behaved like that of Group I and her red cells like those of Group III. These unusual agglutination reactions are interpreted as being indicative of a new or fifth iso-agglutinin group. Another blood with unusual reactions, apparently belongs to a sixth iso-agglutinin group. Details of all work done are given and full discussion is promised in a later publication.

Iso-Agglutination in New-Born Infants and Their Mothers.—The iso-agglutination reactions of 180 women, 54 white and 126 black, and those of their new-born infants have been studied by McQuarrie. The infants' blood group was apparently completely established in twenty of the cases, and partially established in more than one half of the cases. The red blood corpuscles of the new-born infants possessed receptors twice as frequently as the corresponding serums contained agglutinins. The mother's serum agglutinated her own infant's red blood cells in 23.3 per cent. of the cases studied, whereas the infant's serum agglutinated the mother's red blood cells in but 2.7 per cent. In 28.8 per cent. of the cases infant and mother apparently belonged to the same iso-agglutination group, while in 46.6 per cent. there was no evidence of iso-agglutinins in the serum and no receptors in the red blood cells of the infant. The distribution of the colored patients in the four iso-agglutination groups was odd, in that there were none in Group I and more in Group III than in Group II. It was found that more than 70 per cent. of the cases of toxemia (all forms included) occurred in the small group in which there was interagglutination between maternal and fetal blood. Toxemia occurred 16.5 times more frequently when the maternal and fetal bloods were demonstrated to be incompatible than when they were in the same iso-agglutination groups. The data submitted are believed to be very suggestive of the existence of some relationship between the incompatibility of maternal and fetal blood, on the one hand, and the development of eclampsia or pre-eclamptic toxemia on the other.

Effect of Antiseptics on Bacterial Flora of Upper Air Passages.—Certain antiseptic drugs representative of those used in rhinologic practice were studied by Bloomfield. They included potassium permanganate, silver preparations, mercurochrome 220, and another mercurial germicide. The experiments showed that while it was possible in some cases to modify the bacterial flora of the upper respiratory tract by intensive treatments, no essential or permanent alteration could be produced. It is obvious that the bacteria actually multiplying are very firmly lodged in the tissues and are not growing free on the surface or in the mouth secretions. It seems unlikely, therefore, that chemicals applied to the mucous surfaces could effect sterilization without destroying the superficial layers of epithelium at the same time. Mercurochrome penetrates to such an extent that the treated membrane shows a distinct red color even after twenty-four hours. None the less the flora remains essentially unaffected.

Hypoglycemia in Exophthalmic Goiter.—Holman has found that the marked hyperglycemia occurring immediately after

operations on the thyroid corresponds to the period of most active metabolism and the greatest mobilization of the available carbohydrate. This is followed by an abrupt fall in blood sugar content, corresponding to the exhaustion of the supply. In cases reacting favorably, there is, then, a rise in blood sugar, indicating probably a gradual disappearance and elimination of the active thyroid secretion. The rationale of the administration of glucose solutions intravenously is suggested by these studies. A definite plan of intravenous injections of glucose will need to be evolved, controlled by and dependent on successive blood sugar determinations. A weaker solution, from 5 to 10 per cent. in strength, administered in quantities of from 300 to 600 c.c. would probably be preferable to the 20 per cent. solution. Holman asserts that these findings also emphasize the importance of a high carbohydrate and high caloric diet in the preoperative treatment of exophthalmic goiter, and of the administration of 5 per cent. glucose solution per rectum in postoperative care. The administration of large quantities of fluid by infusion, by mouth, and by rectum, undoubtedly favors the elimination of the active thyroid secretion and is, therefore, also an important factor in reducing the severity of postoperative reaction.

Journal of Experimental Medicine, Baltimore

February, 1923, **37**, No. 2

*Influenza-Like Bacilli Isolated from Cats. T. M. Rivers and S. Bayne-Jones, Baltimore.—p. 131.
Studies on Endothelial Reactions. VII. Changes in Distribution of Colloidal Carbon Noted in Lungs of Rabbits Following Splenectomy. N. C. Foot, Boston.—p. 139.
Source of Agglutinins in Milk of Cows. T. Smith, M. L. Orcutt and R. B. Little, New York.—p. 153.
Chlorid Retention in Experimental Hydronephrosis. N. M. Keith, Baltimore and D. S. Pulford, Jr., Rochester, Minn.—p. 175.
*Blood Destruction During Exercise. III. Exercise as Bone Marrow Stimulus. G. O. Broun, New York.—p. 187.
*Id. IV. Development of Equilibrium Between Blood Destruction and Regeneration After a Period of Training. G. O. Broun, New York. —p. 207.
Cytologic Study of Nature of Rickettsia in Rocky Mountain Spotted Fever. F. M. Nicholson, New York.—p. 221.
Microbic Virulence and Host Susceptibility in Mouse Typhoid Infection. L. T. Webster, New York.—p. 231.
Manner of Spread of Mouse Typhoid Infection. L. T. Webster, New York.—p. 269.
Bacterial Hypersusceptibility. II. H. Zinsser and J. T. Parker, New York.—p. 275.

Influenza-Like Bacilli Isolated from Cats.—Six strains of gram-negative nonmotile bacilli isolated from cats are described by Rivers and Jones. They do not grow on ordinary mediums. They do grow, however, on a medium to which an autoclave-liable substance has been added as an accessory growth factor. These bacilli are similar to *Bacillus para-influenzae* isolated from man. One strain of a gram-negative nonmotile bacillus more exacting in its food requirements than *B. influenzae* was found and for convenience has been placed for the present in the para-influenza group.

Exercise Stimulates Hematopoietic Tissue.—The fact is emphasized by Broun that exercise must be an important factor in the maintenance of an efficient hematopoietic tissue. A definite increase in the percentage of reticulocytes occurs after exercise in animals previously kept to a sedentary life. Concomitant changes in the hemoglobin percentage, plasma-cell ratio, and red count offer evidence in addition to that already reported by the author of the occurrence of an increase in blood destruction under such circumstances. Replacement by transfusion of blood destroyed during exercise prevents the reticulated cell reaction. Animals rendered plethoric and then exercised show no increase in reticulated cells while the plethora persists.

Blood Destruction During Exercise.—When a dog kept for a long time under sedentary conditions is exercised continuously for several weeks, Broun says, a decrease in cell volume occurs in the first or second week of exercise, but usually by the end of the third week the loss has been made up. Apparently by this time the hematopoietic tissues have adapted themselves to the increased demands made on them by the hastened rate of destruction. There is, furthermore, some anatomic evidence that such is the case.

Journal of Laboratory and Clinical Medicine, St. Louis

February, 1923, **8**, No. 5

*New Experiments with Vaughan's Crude Soluble Poison. F. P. Underhill and R. Kapsinow, New Haven, Conn.—p. 289.
Organic, Protein and Colloidal Silver Compounds; Their Antiseptic Efficiency and Silver-Ion Content as Basis for Their Classification. J. D. Pilcher and T. Sollmann, Cleveland.—p. 301.
D'Herelle's Phenomenon, Adaptation of Bacteriophage Antagonistic to Bacillus Dysenteriae and Other Bacilli to Various Cocci. Development of Polyvalent Bacteriolysant. E. B. McKinley, Ann Arbor, Mich.—p. 311.
*Biological Assay of Pituitary Extract. E. E. Nelson, Ann Arbor, Mich. —p. 318.
*New Method for Determination of Calcium, Magnesium, Potassium and Sodium in Human Blood. A. Mirkin and S. J. Druskin, New York. —p. 334.
*Modification of Folin-Wu Blood Sugar Method. S. Morgulis, A. C. Edwards and E. A. Leggett, Omaha.—p. 339.
Plea for Standardized Method of Reporting Wassermann Tests. R. A. Kilduffe, Pittsburgh.—p. 341.
Blood Counts with Oxalated Blood Compared with Ordinary Counts. A. G. Foord, Chicago.—p. 343.
Loss of Sugar in Oxalated Blood. D. E. Birchard, Los Angeles, Calif. —p. 346.

New Experiments with Vaughan's Crude Soluble Poison.—The observations made by Underhill and Kapsinow lead them to the view that the substance or substances included in the term "Vaughan's crude soluble poison" are products formed presumably by progressive hydrolytic change rather than that the protein molecule is split into a toxic portion and a nontoxic residue. On such an hypothesis may be explained the varying toxicity of different samples of Vaughan's crude soluble poison, and the observation that by altering environmental conditions changes in toxicity of various fractions may be obtained. It is, therefore, quite probable that Vaughan's crude soluble poison cannot be regarded as a chemical entity but must rather be looked on as a mixture of substances varying according to the conditions leading to its formation.

Biologic Assay of Pituitary Extract.—It is shown by Nelson that potassium chlorid and histamin are not suitable substances for the standardization of pituitary extract. Since no other material which is yet available has an action qualitatively similar to that of pituitary extract, it is felt that a preparation of the gland itself should be used as a standard. Because of the nonidentity of the oxytocic and pressor substances in the pituitary gland, the pressor method should not be employed in the assay of a drug which has its chief use for its oxytocic action.

New Method for Determination of Calcium, Magnesium, Potassium and Sodium in Human Blood.—The method worked out by Mirkin and Druskin is as follows: Calcium and magnesium are precipitated and weighed as stearates (more correctly as a mixture of stearates and palmitates). The latter are then dissolved in hundredth normal sulphuric acid, the precipitated stearic acid is filtered off and the excess of the sulphuric acid titrated with hundredth normal sodium hydroxid. The total amount of the stearates and of stearic acid contained in both being known, the respective amounts of calcium and megnesium can be calculated.

Modification of Folin-Wu Blood Sugar Method.—Morgulis, Edwards and Leggett use the uric acid reagent made according to Benedict's directions and add 8 c.c. of concentrated hydrochloric acid for 100 c.c. of the arsenophosphotungstate reagent. The results by their modified procedure agreed with those obtained on the same material by the Folin-Wu method.

Kentucky Medical Journal, Bowling Green

February, 1923, **21**, No. 2

Bronchopneumonia. J. H. Pritchett, Louisville.—p. 85.
Diagnosis and Treatment of Acute Lobar Pneumonia. F. W. Fleischaker, Louisville.—p. 87.
Complications of Pneumonia. W. V. Neel, Henderson.—p. 89.
Intermittent Postoperative Biliary Obstruction. Case Report. L. K. Baldauf, Louisville.—p. 96.
Cystitis. W. Z. Jackson, Arlington.—p. 97.
Acute Delirium Following Cataract Operation. Case Report. A. O. Pfingst, Louisville.—p. 99.
Multiple Osteo-enchondroma: Case Report. I. A. Arnold, Louisville. —p. 99.
Surgical Consideration of Empyema. J. W. Price, Jr., Louisville.—p. 100.
Corrective Rhinoplasty. G. Aud, Louisville.—p. 105.

Laryngoscope, St. Louis

February, 1923, **33**, No. 2

War Surgery of Larynx; Work at Cape May. G. Berry, Worcester, Mass.—p. 85.
Mucocele of Left Frontal Sinus. H. Smith, New York.—p. 108.
Case of Pachydermia Laryngis. H. Smith, New York.—p. 110.
Removal of Laryngeal Papillomata with Simple Technic. R. McKinney, Memphis.—p. 111.
Treatment of Severe Systemic Infections of Otitic Origin. E. B. Dench, New York.—p. 113.
Methods of Mental Reconstruction of Deafened. H. M. Hays, New York.—p. 117.
Internal Phases of Otitic Inflammations. H. Brooks, New York.—p. 126.
Mastoiditis Associated with Acute Nephritis. C. M. Sautter, New York.—p. 131.
Case of Round Cell Sarcoma and Case of Adenocarcinoma of Paranasal Sinuses. M. F. Butler, Philadelphia.—p. 135.
Treatment of Ozena by Operation. L. E. Wolfson, Boston.—p. 139.
Transfusion of Blood from Immunized Donors. L. J. Unger, New York.—p. 145.
Important Points on La Force and Beck-Shenk Instruments. S. Cohen, Philadelphia.—p. 149.
Pulmonary Abscess; Study of Ninety Cases. B. F. Glowacki, St. Louis.—p. 153.
New Nasal Suction-Irrigation Apparatus. J. M. Lore, New York.—p. 157.

Minnesota Medicine, St. Paul

February, 1923, **6**, No. 2

Recent Advances in Physiology of Alimentary Tract. A. J. Carlson, Chicago.—p. 71.
Medical Men and Institutions of Petrograd in 1917 and 1922. M. Zlatovski, Duluh.—p. 74.
Review of 153 Cases of Bladder Stone Removed by Lithotrity. J. L. Crenshaw, Rochester, Minn.—p. 77.
Bronchoscopic Extraction of Foreign Bodies from Air and Food Passages; Report of Twenty-Five Cases. K. A. Phelps, Minneapolis.—p. 80.
Bilateral Induced Pneumothorax. E. K. Geer, St. Paul.—p. 86.
Status Thymicolymphaticus in Infancy. C. O. Kohlbry, Duluth.—p. 89.
Study of Tonsil Question with Preliminary Report of Roentgen Ray and Radium Therapy in Treatment of Pathologic Tonsils. L. A. Lane, Minneapolis.—p. 97.
Essentials in Treatment of Peritonitis. D. K. Bacon, St. Paul.—p. 104.
Diagnosis of Cancer of Uterus. O. C. Melson, Rochester, Minn.—p. 110.

Missouri State Medical Association Journal, St. Louis

February, 1923, **20**, No. 2

Factor of Obesity in Surgical Operations. W. C. G. Kirchner, St. Louis.—p. 49.
Epidermomycosis. W. Frick, Kansas City, Mo.—p. 55.
Recent Advances in Dietetic Treatment of Diabetes Mellitus. F. Neuhoff, St. Louis.—p. 57.
Toxic Thyroid. M. P. Overholser, Harrisonville.—p. 59.
Lessons from Seven Prostatectomies. W. F. Grinstead, Cairo, Ill.—p. 63.
Hospital Standardization from Standpoint of Hospital Superintendent. L. H. Burlingham, St. Louis.—p. 64.
Problems in Rural Health Service and State Medicine. F. G. Nifong, Columbia, Mo.—p. 66.

New York Medical Journal and Medical Record

March 7, 1923, **118**, No. 5

Clinical Errors in Diagnosis of Acute Contagious Diseases. H. R. Litchfield and L. H. Dembo, New York.—p. 257.
*Rapid Cure of Cystitis in Children. J. C. Hirst, Philadelphia.—p. 263.
Acute Mastoiditis with Facial Paralysis and Remittent Meningitis. A. Roth, Brooklyn.—p. 265.
Value of Percussion in Early Diagnosis of Lobar Pneumonia in Children. J. Popper, New York.—p. 266.
Typical Quinsy in an Infant. F. W. Graef, New York.—p. 267.
Roentgen-Ray Studies of Cardiac Diseases in Children. W. M. Hartshorn and C. W. Perkins, New York.—p. 268.
Myocarditis in Children. J. Epstein, New York.—p. 273.
Diagnostic Points in Diphtheria. A. I. Blau, New York.—p. 275.
Spasmophilia. S. A. Blauner, New York.—p. 276.
Theory and Practice of Artificial Infant Feeding. S. Horwitt, New York.—p. 278.
Infant Feeding. A. E. Mucklow, Brooklyn.—p. 283.
Artificial Feeding of Infants. P. S. Potter, Syracuse, N. Y.—p. 287.
Practical Consideration of Pirquet Feeding Method. Simplified for Children Up to One Year of Age. H. Apfel, Brooklyn.—p. 290.
Febrile Conditions in Children. H. Goldstein, New York.—p. 293.
*Comparative Chemical and Clinical Study of Boiled Butter and Cream in Infant Feeding. H. Lowenburg, Philadelphia.—p. 295.
Blood Transfusion in Malnutrition and Infantile Atrophy. J. D. Leebron, Philadelphia.—p. 298.

Rapid Cure of Cystitis in Children.—The treatment employed by Hirst consists in the injection into the bladder of 5 c.c. of a 10 per cent. solution of silvol or neosilvol, to be retained, if possible. The retention of the solution seems to be of secondary importance, however. In most cases the solution will be retained from fifteen minutes to several hours. The younger the child the more likely the shorter retention. The tenesmus promptly ceases, the frequency of urination diminishes or disappears, and the child is immediately comfortable and quiet. If the symptoms recur or the urine does not promptly clear, the injection can be repeated. Hirst has rarely found this necessary in the acute cases.

Boiled Butter in Infant Feeding.—Lowenburg reports his experience with the simple addition of boiled butter, instead of cream, to ordinary skim milk dilutions containing nothing more than skim milk, water, sugar and salt, with or without the addition of starch in the form of a cereal decoction or of a previously indeterminate amount of boiled and baked brown pulverized flour ball containing or not a small amount of extract of pancreatin and sodium bicarbonate. The addition of flour ball is mentioned to call attention to the fact that it is an old remedy of extreme usefulness and corresponds, in a sense, to the browned flour used in the butter-flour mixture of Czerny and Kleinschmidt and antedates this procedure by probably a century or more. The reason why it is possible to feed the large amount of fat as represented in the butter-flour mixture and not feed the same amount as represented by cream or top milk added to a formula which also contained starch, has not been stated definitely. The matter appeared to be of sufficient importance to Lowenburg to merit investigation, and the problem was first attacked clinically and later confirmed by chemical study. It was found that volatile fatty acids exist in butter in even less stable combination than they do in cream. Boiling butter five minutes slowly will drive off more than 50 per cent. of these acids. Boiling butter two minutes is sufficient for clinical purposes; however, from three to four minutes would probably be a safe average. Sweet butter contains less volatile fatty acids than does salted butter. Boiled butter appears to be a more acceptable addition to milk formulas than does cream. The presence of flour or other forms of starch, though acceptable, to ensure an even distribution of the fat, are not necessary essentials to the digestibility of boiled butter; especially they do not have to be present in equal amounts. Vomiting and diarrhea are neither inaugurated nor made worse by the addition of boiled butter; on the contrary, they often cease after the addition of this substance. Constipation has been the rule and the reaction of the stool has been found to be feebly or markedly alkaline. All infants free of parenteral disturbances, to whom this substance has been fed, have experienced a uniform gain in weight, averaging from 1 ounce to nearly 2 ounces per diem.

Nebraska State Medical Journal, Norfolk

February, 1923, **8**, No. 2

Preliminary Report of Results and Conclusions from One Year's Experience in High Voltage Roentgen-Ray Therapy. R. L. Smith, Lincoln, Neb.—p. 41.
Nonspecific Parenteral Therapy. C. H. Bastron, Lincoln.—p. 43.
Relationship Between Sinus Infection and Lower Respiratory Tract Infection, with Special Reference to Apical Signs in Lung. G. W. Covey, Lincoln.—p. 47.
*New Method of Treatment for Chronic Infections Involving Bone. H. W. Orr, Lincoln.—p. 50.
Cases Illustrating Acute Treatment of Diabetes Mellitus. M. J. Breuer, Lincoln.—p. 52.
Catheterization of Duodenum. C. Emerson, Lincoln.—p. 58.
Fulguration in Treatment of Affections of Lower Genito-Urinary Tract. A. D. Munger, Lincoln.—p. 62.
Modern Therapeutic and Diagnostic Measures. C. C. Johnson, Lincoln.—p. 65.
Modern Scope of Orthopedic Surgery. J. E. M. Thomson, Lincoln.—p. 67.

New Method of Treatment for Chronic Infections Involving Bone.—The fundamental basis of the treatment which Orr proposes is founded on the principle of rest, and this applies to the wound and the wound surfaces as well as to the larger anatomic parts involved in the injury. He insists that at the time of injury, at the time of primary and secondary treatment, and throughout the entire course of the period of disability, there must be first, restoration of the injured parts to normal relationship; and second, immobilization and protection in correct position until complete healing has occurred. This may be accomplished either by plaster or by suitable splints. If the wound is infected, it must be drained. While draining, it must be dressed in such a way that it is not daily or twice daily reinfected. In operating for osteomyelitis of any kind or degree, Orr attempts to remove all infected

tissue, usually by "saucerizing" both soft tissue and bone. The wound is cleaned up as thoroughly as possible, and the saucer-like opening of both soft tissues and bone is gently packed with sterile petrolatum and gauze. The whole area is then covered with dry sterile gauze and the entire limb or part is encased in a well fitting cast of sufficient extent to immobilize completely the infected part. Casts are not split and no windows are cut. If there is no indication, on account of a rise of temperature, for a change in dressing, this dressing is left in place for from ten days to two or three weeks. Occasionally, on account of temperature or odor, the dressings must be changed earlier. One of the principal points in the treatment is infrequent dressing, that is, rest to the wound. The changing of dressings must be done with the same precautions as were employed at the time of the original operation. The wound is cleansed, dried, painted with iodin, a sterile petrolatum pack put on, and the whole is bandaged into place without in any way seriously disturbing the part or the wound. It should be left at each dressing in much the same condition as at the time of the original operation and first dressing. By this plan drainage is as free as may be required. Orr asserts that it is possible to treat such conditions in this way with much better results than formerly and without danger.

New York State Journal of Medicine

February, 1923, **23**, No. 2

*Functional Tests of the Circulation and Their Significance. W. W. Herrick, New York.—p. 53.
*Causation of Symptoms in Cases Simulating Chronic Appendicitis. H. L. Prince, Rochester.—p. 59.
*Intestinal Obstruction Following Unrecognized Cases of Appendicitis. A. M. Dickinson, Albany.—p. 61.
Intestinal Obstruction; Its Early Recognition and Treatment. L. M. Kahn, New York.—p. 64.
Should Gastro-Enterostomy be Performed in the Presence of Ruptured Duodenal Ulcer. D. Guthrie, Sayre, Pa.—p. 66.
Functional Gastric Tests. A. H. Aaron, H. C. Schneider and E. C. Beck, Buffalo.—p. 69.
General Management of Heart Conditions Among Children. M. G. Levy, Buffalo.—p. 71.
The Physician in Court. G. W. Whiteside, New York.—p. 73.

Functional Tests of Circulation and Their Significance.—The development and practical value of the various means proposed for the estimation of circulatory function or efficiency are discussed by Herrick and the practical question propounded is: What will serve the practitioner as a rapid and fairly accurate test of circulatory efficiency? In addition to a developed clinical judgment and the information derivable from the ordinary history and physical examination, the simple exercise test will serve. The observation of the acceleration of the pulse on a definite amount of exercise and the time required for a return to the previous resting rate will satisfy ordinary clinical requirements. Should a higher degree of precision be desired, Schneider's system of rating is recommended. The special student may go further and adopt any or all of the more elaborate methods mentioned. The more factors he takes into account, the better. Always, however, he strives for the unattainable—an exact and thoroughly reliable test of circulatory efficiency.

Causation of Symptoms in Cases Simulating Chronic Appendicitis.—Whenever a patient complains of chronic pain in the right lower quadrant that is tender on examination, Prince says the appendix should be the last thing to consider, not the first; unless there is a history of colicky midline pain, the appendix is only a possible suspect. Indigestion, flatulence, constipation, etc., may be due to anything from cribbing to enteroptosis; from poor habits to bodily fatigue; from organic pathology to mental pathology, and until these fields have been surveyed, operations on the appendix should not be considered.

Intestinal Obstruction Following Unrecognized Cases of Appendicitis.—In the beginning, Dickinson's patient had an attack of appendicitis which was diagnosed as bladder trouble, from which he largely recovered, but with an appendix ready to light up with the slightest provocation. The last illness was caused by a recurrent attack of inflammation of the appendix, which, due to its damaged condition, allowed the infection to spread to the peritoneal cavity with the formation of pus. Nature in her attempt to wall off this infection caused adhesions to form which were soft and vascular at first, but with a diminished blood supply they became tense and contracted, and so shut off the lumen of the bowel. The patient died in a state of shock.

Northwest Medicine, Seattle

February, 1923, **22**, No. 2

Psychanalysis, Freudian and Otherwise—A Plea for Rational and Workable Methods. H. W. Wright, San Francisco.—p. 45.
Facts and Fallacies About Psychotherapy. G. E. Price, Spokane, Wash.—p. 49.
Focal Infection from Internist's Point of View. A. H. Rowe, Oakland, Calif.—p. 51.
Focal Infection. A. D. Dunn, Omaha.—p. 57.
Pain in and Referred from Sacro-iliac Joint. S. G. Brooks, Anacortes, Wash.—p. 60.
Cooperation or Competition with Country Doctor. Lesson from Experience. H. E. Rich, Vernal, Utah.—p. 64.

Oklahoma State Medical Association Journal, Muskogee

February, 1923, **17**, No. 2

Suprapubic Prostatectomy. V. M. Gore, Clinton.—p. 29.
Prostatectomy in Old. W. J. Wallace, Oklahoma City.—p. 31.
Status Lymphaticus. J. W. Nieweg, Duncan.—p. 34.
Urticaria. A. L. Stocks, Muskogee.—p. 36.
Cooperation of Nurse in Prevention of Diseases in Infancy and Early Childhood. C. V. Rice, Muskogee.—p. 38.
Diphtheria. C. W. Fisk, Kingfisher.—p. 40.
Angina Pectoris. D. D. Paulus, Oklahoma City.—p. 43.
Plastic Repair of Sectioned Tendo Achillis. M. E. Stout, Oklahoma City.—p. 44.

South Carolina Medical Association Journal, Greenville

February, 1923, **19**, No. 2

Prostatic Surgery. W. R. Barron, Columbia.—p. 395.
Medical Nomenclature, Desirability of Uniformity and Suggestion of a Plan of Achievement. W. F. R. Phillips, Charleston.—p. 397.
Blood Chemical Analysis in Diagnosis and Treatment. F. B. Johnson, Charleston.—p. 402.
Pyelitis of Pregnancy. N. B. Edgerton, Columbia.—p. 406.

Virginia Medical Monthly, Richmond

February, 1923, **49**, No. 11

Ocular Examinations in Their Relation to General Medical and Surgical Investigation. G. E. de Schweinitz, Philadelphia.—p. 625.
Diagnosis of Brain Tumor. B. R. Tucker, Richmond.—p. 628.
Importance of Ophthalmology and Otology in Location of Intracranial Growths. J. Dunn, Richmond.—p. 633.
Visual Disturbances in Brain Tumors. E. Hill, Richmond.—p. 636.
Roentgen-Ray Examinations in Cases of Brain Tumor. D. D. Talley, Jr., Richmond.—p. 639.
Treatment of Tumor of Brain C. C. Coleman, Richmond.—p 641.
Difficulties Encountered in Diagnosis of Tuberculosis in Children. R. C. Carnal, Rochester, N. Y.—p. 644.
Pneumonoconiosis: Report of Two Cases. A. L. Gray and J. L. Tabb, Richmond.—p. 647.
Case of Typhoid Fever with Perforation. R. M. Wiley, Salem.—p. 649.
*Splenectomy in Treatment of Splenic Anemia. E. J. Horgan, Washington, D. C.—p. 652.
Management of Urologic Cases. J. F. Geisinger, Richmond.—p. 656.
*Relation Between Syphilis and Diabetes Mellitus. J. H. Smith, Richmond.—p. 662.
Obstetric Statistics. M. P. Rucker, Richmond.—p. 665.
The Neglaeted Latent Faculty. W. J. Jones, Crozet.—p. 670.
Wail of the Young. S. Harnsberger, Warrenton.—p. 672.

Splenectomy in Splenic Anemia.—Horgan's patient, a male, aged 26, gave a history of having suffered for seventeen years, his illness progressively becoming worse. At the age of 20 he had a gastro-intestinal hemorrhage and another five years later. A surgeon made a diagnosis of gastric ulcer for which he did a gastro-enterostomy. Jan. 25, 1921, his abdomen was tapped on account of ascites, 12 quarts of fluid being withdrawn. Forty-five subsequent tappings were done. The total amount of fluid removed was 127 gallons. Examination revealed an hypertrophied spleen almost filling the left side of the abdomen. Cytologic study of the blood showed 2,500,000 red cells, and 7,700 white cells. The hemoglobin was 51 per cent. A diagnosis of splenic anemia was made and splenectomy advised. A markedly enlarged spleen was removed. The patient gained 50 pounds in weight, and there has been a steady improvement in the condition of his blood.

Syphilis and Diabetes Mellitus.—In a series of seventy-nine cases of diabetes Smith found clear evidence of syphilis in only two cases, both with heart lesions, probably also syphilitic.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 3, 1923, **1**, No. 3244

Fundamental Conceptions of Biology. J. S. Haldane.—p. 359.
*Late Results of Meningeal Hemorrhage of Newly Born. H. C. Cameron and A. A. Osman.—p. 363.
*Modification of Gastric Function by Means of Drugs. T. I. Bennett. —.p. 366.
Treatment of Kala-Azar by "Bayer 205." W. Yorke.—p. 370.
*Treatment of Ankylostomiasis with Betanaphthol and Thymol. H. G. Phippen.—p. 371.
Splint for Median Paralysis. W. Mercer.—p. 371.
Relation of Sciatica to Sacro-Iliac Joint: Treatment by Diathermy. J. Cowan.—p. 372.
Portal Pyemia Secondary to Umbilical Infection. G. B. White.—p. 373.
*Excision of Fibula in Amputations Below Knee Joint. C. Noon.—p. 373.
*Bronchiectasis with Unusual Complications. I. J. Davies.—p. 374.

Meningeal Hemorrhage of Newly Born.—The etiologic relationship of prenatal cerebral hemorrhage to cerebral diplegia or paraplegia is discussed by Cameron and Osman. They state that among cases of infantile diplegia or paraplegia it is possible to recognize a group in which the defect is confined to the sensorimotor cortical areas. Probably all cases in this group are due to birth injury, although all cases of birth injury may not belong to the group. Since education at first proceeds almost entirely by sensorimotor paths there is in early childhood a deceptive appearance of gross mental defect. In later childhood progress may be rapid and recovery almost complete. The difficulty is overcome by the remarkable persistence in effort which is characteristic of most of these children. Even when voluntary movements remain stiff and awkward the child may be a quick learner by eye and ear. Incoordination may remain though character and intelligence may be on a high plane.

Modification of Gastric Function by Drugs.—Bennett agrees with other observers that atropin diminishes gastric secretion. The hypodermic injection of 1/100 grain of atropin sulphate produces a very definite effect. Oral administration of atropin or belladonna produces the most marked effects. Pilocarpin increases gastric secretion. Sodium bicarbonate tends to excite the gastric mucosa to increased secretion, and this effect more than counterbalances the neutralizing effect of the salt. Other salts, particularly magnesium oxid and bismuth oxycarbonate, have far less stimulating effect, and the former, weight for weight, possesses greater neutralizing power. The rational method of employment of these salts in cases of hyperacidity is to administer them at such periods after meals as will lead to their neutralizing effect coming into play without there being the possibility of producing any marked effect on the actual gastric cells. In gastric therapy, sodium bicarbonate finds its greatest usefulness in those rather rare cases in which there is an excess of mucus secretion with low or absent hydrocloric acid. Atropin also delays gastric emptying; pilocarpin increases the rapidity of emptying. As to strychnin, Bennett says that in order to produce any beneficial effect on gastric atony very small doses of strychnin must be employed.

Treatment of Ancylostomiasis with Betanaphthol and Thymol.—Good results are reported by Phippen as accruing from his method of treatment of ancylostomiasis. He proceeds as follows: In the evening a powder containing calomel, 5 grains, and sodium bicarbonate, 10 grains, is given. This is followed at 7 a. m. with sodium sulphate, 3 drams, in 3 ounces of water. At 8 a. m. a mixture is given containing: betanaphthol, ½ dram; thymol, ½ dram; mucilage, q. s., and water to 1 ounce. At 10 a. m. the betanaphthol and thymol mixture is repeated, and the patient is kept in bed until about 4 p. m., not allowing him to have any food or liquid; after that time he is allowed a fluid diet only for the remainder of the day. Those desiring to leave hospital may do so, to report again in seven days for further treatment; but on the day after leaving hospital they send a specimen of feces for microscopic examination for the ova of ancylostoma. This is done after each treatment until the stool is free of these parasites. In no case were more than eight treatments required.

Excision of Fibula in Amputations Below Knee Joint.—In a considerable number of cases of amputation below the knee joint the presence of the fibula appears to cause considerable difficulty in fitting and wearing a satisfactory artificial limb. It is in these cases especially, in which atrophy has been excessive and in which pressure on the prominent head of the fibula causes pain, that Noon urges removal of the bone; in fact, he thinks it is an advantage to perform it in all cases in which the stump will not measure more than 4 inches.

Bronchiectasis with Unusual Complications.—In one of Davies' cases the accessory nasal sinuses became infected, requiring operation for empyema of the antra of Highmore. The fetid pus from the pulmonary cavities was often expelled in quantity and projected suddenly with much force into the mouth and nose, and infection of the accessory sinuses arose in this way. In a second case cited, the complications which chiefly deserve notice were a chronic glossitis, and a persistent severe albuminuria from chronic nephritis, both of which were probably of toxic origin from chronic infection.

Edinburgh Medical Journal

February, 1923, **30**, No. 2

Psychotherapy in General Practice. E. Bramwell.—p. 37.
*Fatal Case of Empyema Due to Anaerobic Infection. J. P. Leckie.—p. 60.
*Punctured Wound of Rectum and Bladder. W. M'D. Selby.—p. 68.

Fatal Case of Empyema.—The infection in Leckie's case was communicated directly from the pleura to the lung; and this infection attacked, in the first instance, not the air cells but the interstitial tissue of the lung. All the indications pointed to the conclusion that the disease was due, in this instance, to infection from extensive injury to the guns, which permitted direct absorption of the bacteria into the blood stream. The nature of the infecting gram-positive fusiform bacilli could not be determined.

Punctured Wound of Rectum and Bladder.—Selby's patient inadvertently sat on the tines of a pitchfork and one tine penetrated his perineum, 1 inch to the right of the anus; the other point grazed the point of his penis. He was given antitetanic serum; otherwise nothing was done. The fork missed the rectum and narrowly missed the urethra. The man was walking about four days after receipt of the injury.

Indian Journal of Medicine, Calcutta

December, 1922, **3**, No. 4

Diabetes. J. P. Bose.—p. 252.
Dermatitis Blastomycetica Simulating Leprosy. J. C. Mukherji.—p. 263.
Colon Bacillus Infection. T. Sur.—p. 268.
Treatment of Compound Fractures. J. K. Banerji.—p. 276.
Seasonal Variations in Surgical Sepsis. K. K. Chatterji.—p. 280.
How Long Can a Fetus be Alive After Prolapse of the Hand? R. S. Tembe.—p. 282.
New Parasitic Ciliate Protozoon. (Anoplophrya cylindrica). E. Ghosh. —p. 283.

Lancet, London

March 3, 1923, **1**, No. 5192

Therapeutic Inoculation. L. Colebrook, E. J. Storer and A. E. Wright. (To be concluded.)—p. 417.
*Treatment of Menorrhagia by Radium. G. Blacker.—p. 421.
*Anesthetic Action of Pure Ether. H. H. Dale, C. F. Hadfield and H. King.—p. 424.
*Chronic Septic Splenomegaly. G. Ward.—p. 429.
Attacks of Arrested Respiration in the New-Born. G. F. Still.—p. 431.
Treatment of Chronic Intestinal Stasis by Colloidal Kaolin. A. C. Jordan.—p. 432.
Gonorrhea in Women Treated with Contramine Pessaries. G. W. Rundle.—p. 434.
Fracture of Head of Tibula. A. W. Lemarchand.—p. 434.
Case of "Infectious Mononucleosis." P. D. H. Chapman.—p. 434.

Treatment of Menorrhagia by Radium.—The results obtained by those who have employed radium in the treatment of hemorrhage from the uterus, Blacker says, show that it is a valuable and efficient method of controlling excessive hemorrhage at the menopause; that it can be employed safely for the same purpose in small uncomplicated fibroid tumors of the uterus, and that by its means excessive menorrhagia in young women, which resists ordinary methods of treatment, can be brought under control.

Anesthetic Action of Pure Ether.—Observations made by Dale, Hadfield and King give no support to the statements that pure ether is devoid of anesthetic action, and that the

activity in this direction of ordinary ether is due to impurities. On the contrary, so far as the anesthetic action of ether is affected by purification, it is in their experience improved by the removal of impurities, which irritate the respiratory mucosa and cause excessive secretion, but no other change. The purest ether is the best as an anesthetic.

Chronic Septic Splenomegaly.—Ward concludes that the underlying pathologic process is the same in all chronic splenomegalies of septic origin, and that the recognition of this origin will remove a large number of cases from the groups of idiopathic splenic anemia and Banti's disease. It also will greatly assist treatment.

Medical Journal of Australia, Sydney

Jan. 27, 1923, **1**, No. 4

Origin, Causation and Treatment of Rodent Ulcer. N. Paul.—p. 85.
Early Signs of Disease. W. Pern.—p. 90.
Diurnal Variations of Diastatic Content of Normal Urine. G. Cameron.—p. 91.
Napoleon I. C. MacLaurin.—p. 95.
Extensive Bronchiolectasis in a Young Child. D. L. Barlow.—p. 99.

Feb. 3, 1923, **1**, No. 5

Aims and Ideals of Antenatal Work. A. M. Wilson.—p. 113.
Antenatal Care. R. W. Chambers.—p. 115.
Antenatal Notes. R. Fowler.—p. 117.
Use of Digitalis in Heart Failure. H. Ritchie.—p. 119.

Feb. 10, 1923, **1**, No. 6

Psychic Aspect of Stammering: Its Basis, with Corrective Measures. T. G. Leary.—p. 141.
*Nervous Mechanism of Functional Disorders of Digestion, with Special Reference to Hypertonic and Hypotonic Dyspepsia and Nervous Colitis. C. B. Blackburn.—p. 145.
*Auricular Fibrillation; Death After Administration of Quinidin Sulphate. C. T. De Crespigny.—p. 150.
*Case of Primary Multiple Tuberculoma of Liver with Degenerated Hydatid Cyst. C. T. De Crespigny and J. B. Cleland.—p. 151.
Three Cases of Headache of Intranasal Origin. W. Sangster.—p. 152.
*Two Unusual Cases of Abdominal Cancer. J. B. Dawson.—p. 153.
Apparently Undescribed Form of Ligneous Edema of Neck. R. Pulleine.—p. 153.

Treatment of Functional Disorders of Digestion.—In treating these cases Blackburn gives first consideration to the nervous side, eliminating worry, overwork, etc. Very thin, miserable, underfed patients are ordered to begin with rest in bed and massage. Diet requires careful attention, as most patients suffer from malnutrition. A liberal, plain, mixed diet, containing fresh butter, eggs, vegetables and fruit, is ordered. When there is a morning diarrhea, a low level lavage, with 1¾ to 2¼ liters (3 or 4 pints) of plain saline solution immediately on rising, or after the first evacuation, will often clear the bowel and restore a regular single evacuation. Drug treatment should aim mainly at improving the nerve tone. Astringents and intestinal antiseptics have, in Blackburn's opinion, a very limited sphere of usefulness.

Auricular Fibrillation: Death After Administration of Quinidin Sulphate.—On admission, de Crespigny gave his patient, male, aged 38, tincture of digitalis in doses of 1.8 mils every six hours for twenty-four hours and then 1.2 mils every six hours. Twelve days later quinidin sulphate was given three times a day in doses of 0.2 gm. for two days and thereafter in doses of 0.4 gm. every four hours. Three days later the pulse rate was 100 and quite regular. Examination of the heart revealed a systolic bruit at the apex. The same day, at 4:30 p. m., there was a sudden onset of coma with clonic spasms, but no evidence of paresis. The right pupil was fully dilated. The man died at 9 p. m. The postmortem examination failed to disclose any anatomic or pathologic condition which could account for the sudden death.

Primary Multiple Tuberculoma of Liver with Degenerated Hydatid Cyst.—de Crespigny and Cleland believe that in this case the hydatid disease of the liver may have lessened the protective influence of the cells of the liver against tuberculosis, with the result that an accidental introduction of tubercle bacilli, perhaps by the alimentary canal, led to their establishment in the liver. Primary tuberculosis of the liver is a very rare occurrence. No old tuberculous lesions were met with in other parts, though especially searched for.

Ring Carcinoma of Small Intestine: Carcinoma of Prolapsed Stomach.—Dawson relates the case of a woman, aged 62, who presented all the usual signs of partial and increasing intestinal obstruction. The clinical picture seemed to fit the diagnosis of carcinoma of the large intestine. Abdominal palpation under the anesthetic revealed a palpable tumor situated 7.5 cm. to the right of the umbilicus, a small, hard lump anchored posteriorly. Exploration showed this to be a ring carcinoma of the small intestine. The second patient, female, aged 64, had an intense desire for food, followed by severe nausea when confronted with it. She also complained of rapid loss of weight and progressive weakness. A mass the size of an orange was clearly visible in the midline, just above the umbilicus. The mass was unusually mobile; there was no part of the abdomen to which it could not be pushed, but it was not possible to place it in the pelvic basin. The primary diagnosis was carcinoma of a prolapsed transverse colon. The lump proved to be a cancer of a prolapsed stomach.

Journal of Oriental Medicine, Dairen, Manchuria

February, 1923, **1**, No. 1

Formation of "Crusta Phlogistica" on Venous Blood. J. Murakami.—p. 3.
*Position of Heart in Acute Pericarditis with Effusion. G. Totani, S. Okada and Y. Shima.—p. 11.
Constitution of "Tien-shien-tszu." M. Nakao.—p. 19.
*Problem of Child Welfare in Manchuria. T. Suzuki.—p. 23.
*Tuberculosis Among Japanese in Manchuria. H. Yanagihara.—p. 29.
Influence of Sun and Color Stain Solutions on Hemolytic Action of Red Blood Corpuscles Taken from Goats. H. Yanagihara and H. Hirata.—p. 31.
Case of "Situs Inversus Viscerum Totalis." J. Murakami and H. Nishida.—p. 33.
Differential Diagnosis of Exudates and Transudates by Means of Permanganate Reduction Strength. K. Ikeda.—p. 34.
*Study of Presence of Acetone-Body in Urine of Measles Patient. Nagahara.—p. 35.
Treatment of Dysentery with Bakteriophage. T. Suzuki, K. Tokuye and K. Hatai.—p. 36.

Rotation of Heart in Acute Pericarditis.—A case of pericarditis with effusion is reported by Totani, Okada and Shima, in which a conspicuous deviation was noted in the electrocardiograms during the progress of the disease which suggested that rotation of the heart around its own axis occurred, accompanied by displacement. The importance of electrocardiographic studies in cases of pericarditis is discussed.

Infant Mortality in Manchuria.—The infant mortality in Manchuria (averaged for a period of two years), according to Suzuki, was 134—, lower than in the large cities of Japan proper. The highest mortality rate was for infants under 1 year of age. The second highest period was from the ages of 3 to 5. The third highest period was in the third decade. The five most important children's diseases in Manchuria are: pneumonia, enteritis, beriberi, meningitis and tuberculosis. Premature births occur frequently. In 1918 there were 1,690 births and eighty-three stillbirths.

Tuberculosis of Skin Among Japanese.—Of 9,421 Japanese in Manchuria who had tuberculosis, Yanagihara found only eighteen (0.19 per cent.) with tuberculosis of the skin. In Japan proper, this disease is far more common, ranging as high as 0.76 per cent. Yanagihara ascribes the less frequent occurrence of skin tuberculosis among the Japanese to: the Japanese are rich in skin pigment; their habits of living and clothing make it easier to take sun baths; the Japanese custom of taking hot baths frequently; the diet, consisting largely of vegetables instead of meat.

Acetone in Urine in Measles.—Of the twenty-five children who had measles, fifteen showed the presence of acetone in the urine. It was first visible on the third day of the disease, and was present in considerable amount from the fifth to the eighth day. After the eleventh day it gradually lessened in amount, and by the thirteenth day it had disappeared altogether. The appearance of the acetone was coincident with the appearance of the Koplik spots, and was very heavy during the eruption period.

South African Medical Record, Cape Town

Feb. 10, 1923, **21**, No. 3

Widal versus Complement Fixation. A. Pijper (to be continued).—p. 51.

Annales des Maladies Vénériennes, Paris

December, 1922, **17**, No. 12

*Fatal Case of Late Jaundice Due to Neo-Arsphenamin. J. Golay.—p. 881.
*Absorption of Bismuth Preparations. Levy-Bing et al.—p. 887.
*Mycosic Chancre Simulating Syphilitic Chancre. Mouradian.—p. 899.
Fordyce's Disease Limited to Vulva. R. Barthélemy.—p. 901.

Fatal Case of Jaundice Due to Arsphenamin Derivative.—Golay publishes the history of a patient who died from yellow atrophy of the liver two months after the last injection of an arsphenamin derivative and ten days after the last injection of salicylate of mercury. The Wassermann reaction was negative. He attributes this fatal outcome to the toxic influence of arsphenamin on the liver and refutes the theory of syphilitic origin of such disturbances of the liver.

Radiographic Research on the Absorption of Bismuth Preparations.—Levy-Bing, Belgodère and Auclair publish roentgenograms of the results of 100 intramuscular injections of 15 cg. of bismuth hydroxid.

Mycosic Chancre Simulating Syphilitic Chancre.—The patient had a negative Wassermann reaction and recovered promptly after treatment with iodids.

January, 1923, **18**, No. 1

*Syphilis of the Sympathetic Nervous System. A. Lévy-Franckel and E. Juster.—p. 1.
Elimination of Arsenicals by the Urine. Lévy-Bing and Férond.—p. 24.
Gummatous Osteitis in Infant. H. Haxthausen.—p. 59.

Syphilis of the Sympathetic Nervous System.—Lévy-Franckel and Juster review pathologic conditions due to affections of the sympathetic nervous system or endocrine glands, and emphasize the importance of considering the possible syphilitic etiology in these diseases. It is important in diabetes, exophthalmic goiter, prurigo, Raynaud's and Addison's diseases, acanthosis nigricans, though tuberculosis is the much more frequent cause in Addison's disease, and cancer in acanthosis. Arrhythmia may also be due to syphilis.

Gynécologie et Obstétrique, Paris

December, 1922, **6**, No. 6

*Treatment of Uterine Fibromas. J. B. Kouwer.—p. 385.
*Ovarian Cysts and Pregnancy. J. Szymanowicz.—p. 405.
*Partial Hysterectomy. H. Hartmann.—p. 420.

Radiotherapy and Surgical Treatment of Uterine Fibromas.—Kouwer recommends restricting the treatment with roentgen rays to an extremely small number of uterine fibromas. He finds that more than half do not need any treatment at all. For the rest, laparotomy is the method of choice. He reviews his failures and finds that only in two patients who died, would roentgenotherapy have been indicated. He believes that the dangers from operation should be rated lower than the dangers from roentgen and radium treatment, to which he makes three objections: 1. The roentgen rays castrate the patient unnecessarily. It would be a mistake to believe that the ovary is important only in young persons. Even after the fiftieth year there may be very severe ovariprival symptoms after castration. Among 134 laparotomies performed by Kouwer, he was able to save both ovaries in 107 women. His second objection to radiotherapy is that it sacrifices the uterus also, while operation may allow gestation in suitable cases. The third objection is that radiotherapy is hazardous in a condition in which the exact diagnosis cannot be made without an operation. Radiologists do not treat submucous or polypous fibroids. Yet the diagnosis of this condition was impossible before operation in 24 out of 45 of Kouwer's cases. The same uterus may contain different sorts of fibroids. Sarcomatous or carcinomatous changes of the tumor (another admitted contraindication for radiotherapy) usually cannot be clinically recognized. Diagnostic curettage in a uterine cavity which is deformed by fibromyomatous masses, cannot reach the whole inner surface, but can injure the tumor and cause necrosis or infection. He gives statistics on unexpected circumstances found in his 493 operations, and publishes 13 failures of radiotherapy performed by competent radiologists. He protests energetically against the "innocence and efficiency" of radiotherapy of fibroids. His opinion on the treatment of climacteric menorrhagia is the same. His treatment of this condition consists in energetic curettage, which is also indicated for diagnostic purposes, and hot (at least 50 C.) vaginal irrigations for several months. He has not seen any cases which would have required hysterectomy or castration with roentgen rays.

Ovarian Cysts and Pregnancy.—Szymanowicz publishes thirty-five cases of ovarian cysts in pregnancy. Only 8.6 per cent. of the operations were followed by a miscarriage. He operates immediately after the diagnosis is made. The only exceptions are cysts of corpus luteum with hydatidiform mole, because they disappear, and bilateral ovarian cysts in women who insist on having children.

Fundus Uteri Hysterectomy.—Hartmann describes in detail his technic for the operation recommended recently by Lecène and Gaudart d'Allaines. The operation consists in the ablation of the fundus uteri and both tubes, with conservation of at least a large fragment of an ovary. Menstruation continues in such cases; this is especially important in young nervous women.

Presse Médicale, Paris

Feb. 7, 1923, **31**, No. 11

*Epilepsy and General Paralysis. L. Marchand.—p. 121.
*Materia Medica of Pituitary Preparations. Choay.—p. 123.
*Intraspinal Anesthesia. R. Bloch and Hertz.—p. 125.

Feb. 10, 1923, **31**, No. 12

Epididymectomy in Genital Tuberculosis. Marion.—p. 129.
Rapid Serial Roentgenography in Diagnosis of Duodenal Ulcers. A. Carrié and Keller.—p. 130.
Splenectomy with Adherent Spleen. P. Lombard.—p. 132.
Wound of Heart with Thrombosis in Left Axillary Artery. G. L. Hartmann-Keppel.—p. 133.
The Abuses with New Remedies. L. Cheinisse.—p. 134.

Epilepsy and General Paralysis.—Marchand discusses the literature on syphilis in epileptics, epilepsy in syphilitics, and the connection between infantile paralysis and epilepsy with inherited syphilis. It is often difficult to distinguish true epileptic seizures from the convulsions which may usher in general paresis. The term syphilitic epilepsy should be reserved for cases in which the seizures form the dominant symptom of the specific infection. In certain cases the epilepsy subsides under specific treatment, but the seizures may return years afterward accompanying general paralysis. In one of his own cases the first seizures occurred at the age of 22, a few months after infection; no seizures were observed after the age of 28 for five years. Then they reappeared at 33, and two years later the clinical picture of general paralysis was complete. The history of the case, the course and the findings in the spinal fluid differentiate the affection sooner or later.

Pituitary Extracts.—Choay compares the pituitary from different animals, and different parts of the organ, and gives the preferable technic for obtaining extracts.

Intraspinal Anesthesia.—Bloch and Hertz cite further experiences of their own and of others which confirm, they say, the advantages of intraspinal injection of caffein in case of syncope from intraspinal injection of procain. It answered the purpose perfectly in eleven of the thirteen cases in which it was applied after failure of artificial respiration and subcutaneous injection of caffein. In the one fatal case the syncope occurred after hysterectomy as the table was lowered to the horizontal. Intraspinal injection of 0.1 gm. of caffein revived the patient, but only temporarily, and a second injection had no apparent effect. The others, all with extreme syncope, recovered after intraspinal injection of from 0.25 to 0.37 gm. In prophylaxis, they mix 0.15 gm. of the procain preparation with 0.12 gm. of caffein and 0.15 gm. of sodium benzoate (to dissolve the caffein).

Revue Médicale de la Suisse Romande, Geneva

December, 1922, **42**, No. 12

Traumatic Neuroses in the Insured as Observed by a Judge. P. Piccard.—p. 769. Cont'd.
*Serous Apoplexy Following Arsphenamin. R. Gonin.—p. 775.
Elementary Notions of Physical Chemistry. J. Perrier.—p. 791.
*The Cerebrospinal Fluid in Tuberculous Meningitis. G. Bickel.—p. 800.
*Caffeinism. R. Guillermin.—p. 808.
A New Fracture of the Calcaneum. H. Vulliet.—p. 815.

Serous Apoplexy Following Arsphenamin.—Gonin publishes two cases of serous apoplexy (hemorrhagic encephalitis) following administration of arsphenamin. He reviews the present knowledge of such mishaps during the treatment of

syphilis. This condition usually starts on the third day after the injection, with headaches and convulsions, which may be followed by coma and death within from twenty-four to forty-eight hours. The serous apoplexy is due to intolerance for the drug, and may occur even in the first stage of syphilis. Serous apoplexy follows more often the second or third injection, while the Herxheimer reaction is more likely to appear after the first. The apoplexy requires immediate administration of epinephrin (0.25 mg. intravenously, followed by injections of from 1 to 2 mg. intramuscularly), and a change of the drug. Herxheimer's reaction passes, if the antisyphilitic treatment is continued. It is impossible to predict serous apoplexy. The condition is often fatal, but there are no sequelae if the patient survives. Milian calls it a nitritoid crisis localized in the brain. The Germans call it hemorrhagic encephalitis.

The Evolution of the Cerebrospinal Fluid in a Case of Tuberculous Meningitis with Recovery.—Bickel publishes a series of eleven samples of very carefully examined cerebrospinal fluid taken from a case of bacteriologically confirmed tuberculous meningitis, which recovered. The early strong lymphocytosis changed into exclusive lymphocytosis on the hundred and sixth day. The number of cells diminished with the amelioration of the clinical state, but remained above normal. The amount of protein paralleled the cell count, while chlorids and sugar were low at the beginning and increased slowly. The permeability for nitrates was great at the beginning and diminished afterward. Many of these rare cases which recover from the first attack of tuberculous meningitis, die from another attack.

Caffeinism.—Guillermin reviews the different findings of untoward effects of coffee. He states that coffee prepared in the Turkish fashion does not cause insomnia, and keeps the aroma and the stimulating effects of the coffee. He attributes this to the loss of some noxious volatile substances originating in the roasting of the bean. Turkish coffee is prepared, he relates, by boiling the finely pulverized coffee in an open container. It is ground as fine as flour. It is boiled up three times and the boiling is interrupted.

Archivio Italiano di Chirurgia, Bologna

December, 1922, **6**, No. 5

Wounds of the Common Carotid. D. Calzavara.—p. 433.
*Asepsis in Gastro-Intestinal Operations. F. Cinquemani.—p. 445.
Retroperitoneal Hydatid Cyst. A. Caucci.—p. 481.
Supra-Umbilical Spinal Anesthesia. M. Fasano.—p. 507.
Improved Instruments for Resection of Stomach. G. Solaro.—p. 519.

Asepsis in Gastro-Intestinal Operations.—Cinquemani gives twenty-four illustrations of various devices and methods devised by Parlavecchio and his school at Palermo to insure asepsis in operations on the stomach and bowel. One of his principles is that the two clamps must be applied so close together that there is room between them only for the iodized bistoury to sever the bowel. Not a glimpse is obtained of the mucosa of the stumps. His enterostome is two clamps that fit and lock into one when the clamped stumps are brought together. The serosa is then drawn up and sutured over the double locked clamps. For side-to-side anastomosis, he takes up a fold in the two loops and sutures the serosa side to side, leaving the ends of the thread long, with a third thread in the center to draw up the sutured loops into a peak. This peak is then grasped with a clamp the blades of which are broad oval plates that compress the peak over a broad extent, and expel all the contents and blood from both loops. Then an elastic curved clamp, which fits close against the convex edge of the clamp plates, is applied below, and the side-to-side suture is completed above the narrow curving branches of this clamp. For exclusion of the pylorus, cotton tape, 1.5 cm. wide, is used. The ends are sutured, not tied, as a knot injures the tissues. The tape method has proved harmless and effectual in years of practice. For resection of the bowel, he draws the loop outside the peritoneum, and sutures the incision behind it, before he cuts the bowel with the end-to-end technic described above. In a recent case of extensive cancer requiring resection of part of the ileum, cecum and colon, there was suppuration in the preperitoneal space, with final recovery. If the loop had been inside the peritoneum, this complication would certainly have been fatal.

Riforma Medica, Naples

Jan. 8, 1923, **39**, No. 2

*Permeability of Meninges for Iodids. G. de Toni.—p. 25.
*Gastric Secretion in Cardiac Insufficiency M. Garofeano.—p. 27.
Colloidal Cancer of Vater's Papilla. A. Angeli.—p. 28.
Radical Treatment of Ingrowing Nails. D. Taddei.—p. 33.

Permeability of Meninges.—De Toni injected dogs with 0.05 to 0.1 gm. of potassium iodid per kilogram of body weight. The injections were made into the fourth ventricle or subcutaneously, and the resorption was tested by the conjunctival reaction to calomel. As Sicard has already demonstrated, there was no difference in the resorption by these different routes. In children the results were similar, both in the healthy and in those with tuberculous meningitis, the resorption being tested by the urine. Other drugs were also resorbed rapidly from the cerebrospinal fluid. To test the opposite mode of resorption—from blood into the cerebrospinal fluid—de Toni injected calomel into the fourth ventricle. After the subcutaneous injection of potassium iodid, mercurous iodid was found in the ventricle, thus establishing the permeability of the meninges.

Gastric Secretion in Cardiac Insufficiency.—Garofeano examined the gastric secretion in twelve cases of cardiac insufficiency. Free hydrochloric acid was diminished or absent, especially with mitral stenosis. The combined and total acidity was also diminished, and organic acids (in four cases, lactic acid) were present in all of the cases. Pepsin was diminished, and absent in two cases. He believes that the dyspepsia in heart disease is of the hypopeptic type, and with mitral disease is due to the venous stasis, the passive congestion affecting the stomach as well as other organs. With aortic affections, it is due to the inadequate blood supply.

Archivos Españoles de Pediatría, Madrid

December, 1922, **6**, No. 12

*Inherited Syphilis Aroused by Trauma. González J. Meneses.—p. 705.
Dyspepsia in Infants and Young Children. A. R. Lozano.—p. 710.

Latent Inherited Cerebral Syphilis Aroused by Trauma.—Meneses reports that epileptiform seizures developed for the first time twenty days after the boy had been knocked down by a bicycle. The typical seizure was followed by repeated jacksonian convulsions. The Wassermann reaction was positive, and stigmata of syphilis were unmistakable, although there had been no previous symptoms. After a decompression operation, the convulsions continued but only nine or ten occurred during the day instead of the twenty or thirty at first. Mercurial treatment was instituted and supplemented with neo-arsphenamin. There were no further convulsions after the first intravenous injection of the arsenical, and the child now aged 5, has developed apparently normally during the year since. Meneses adds that if specific treatment had been begun earlier, the operation on the skull might possibly have been avoided. The trauma had evidently reduced the defensive forces of the brain and allowed the spirochetes to bring on the acute hydrocephalus responsible for the convulsions. The rolandic region appeared entirely normal.

January, 1923, **7**, No. 1

*Atrophy of the Lower Jaw. V. Juaristi and D. Arraiza.—p. 5.
*Spastic Paralysis in Children. R. Duarte Salcedo.—p. 14.

Acquired Atrophy of the Lower Jaw.—Juaristi and Arraiza give several illustrations of four cases and cite others, all presenting malformation of the mandible in consequence of some infectious process or trauma. The atrophy may be due to long immobilization, or loss of substance, or it may be the result of injury of the sympathetic nervous system. They have witnessed it develop from this latter cause the same as when the cause acts on a long bone. They urge the necessity for prompt measures to correct any tendency to ankylosis, since otherwise speech and the teeth develop defectively, while atrophy may entail grave deformity.

Congenital Spastic Paralysis in Children.—Duarte Salcedo contends that infantile hemiplegia, Little's disease and other forms of spastic paralysis in children are not isolated affections but form a great syndrome of spastic paralysis from congenital encephalopathies. The clinical picture varies with the different regions involved, but the etiology, pathogenesis

and treatment have characters common to all. Inherited syphilis is responsible for about 95 per cent. of the cases; birth trauma for 4 per cent., and infections and intoxications for 1 per cent.

Repertorio, Bogota

October, 1922, **14**, No. 1

Bill Before Congress to Regulate Practice of Medicine in Colombia. L. F. Angel, J. I. Vernaza and M. J. Lucio.—p. 5.
Benzyl Benzoate in Treatment of Spastic Conditions. V. Peñuela Rodriguez.—p. 6.
*Espundia in Colombia. A. Peña Chabarría.—p. 10.

Espundia in Colombia.—Peña Chabarría states that none of the early medical writers mentioned espundia or Velez bubon, as he calls it, and it must be of comparatively modern importation. Camacho was the first South American to describe it, in 1889, but Mateus and Franco in 1893 described it more fully—all in Colombia. Its nature as a blastomycosis is now generally accepted but the intermediate host in Colombia seems to be *Rhodnius prolixus* and not *Conorhinus megistus*, as in Brazil. The disease has two phases, first the skin ulcerates and later the mucosa of nose, pharynx and throat develops ulcerations. The first stage lasts from six months to two years, as a rule, but the ulcers may persist for years, although seldom entailing much of a defect. He has encountered four cases of this blastomycosis among 148 patients with various skin ulcerations, in the last eight months. In the second stage, the ulcerations in the nose and throat are destructive; they rarely appear until the skin lesions are subsiding. An important differentiating point is that the lymph glands are not enlarged. The article is continued.

Revista del Instituto Bacteriológico, Buenos Aires

December, 1922, **3**, No. 2

Atypical Paratyphoid B Bacilli. A. Bachmann.—p. 3.
*Prophylaxis of Bubonic Plague. M. V. Carbonell.—p. 17.
*Oligodynamia. R. Wernicke and A. Sordelli.—p. 29.
Natural Reenforced Rabies Virus. R. Biglieri.—p. 57.
*The Kurloff Bodies. A. Senez.—p. 61.
Strongyloidosis of the Dog Kidney. G. Pacella and R. Esquivel.—p. 73.

Sterilization of Grain Bags.—Carbonell gives an illustrated description of a furnace and hot air chamber for sterilization of burlap grain sacks by superheated air. An electric ventilator forces the air through the sacks down to the bottom of the furnace and draws the air up through the furnace again, a constant circle. Thousands of bags can be sterilized rapidly in this way, supplemented by the usual formaldehyd and ammonia sterilization in the same hot air chamber.

Research on Oligodynamia.—This term was coined by Naegeli to express the toxic action exerted by certain metallic salts in extremely dilute solutions. The research here described shows that simple contact of the metal with the water—even for months—does not confer oligodynamic properties on it. But when the metal salt is dissolved in the water, it rapidly becomes strongly oligodynamic. Hence the oligodynamia observed with distilled water is due to the minute quantities of dissolved copper in it. And the dissolving of the copper is due to the gases present.

Kurloff Bodies.—Senez concludes from his extensive research that the Kurloff bodies in the mononuclear corpuscles of guinea-pigs are parasites, of the type of Prowazek's chlamydozoa. They are not found in the blood at birth but they appear the seventh day, even if the young are kept separate from the mother. Attempts at transmission never succeeded.

Revista de Medicina y Cirugía, Havana

Feb. 25, 1923, **28**, No. 4

*Indications for Tonsillectomy. Fernández Soto.—p. 127.
*Therapeutic Transfusion of Blood. A. Recio and A. Figueras.—p. 145. Begun in No. 3, p. 85.

Indications and Contraindications to Tonsillectomy.—Fernández Soto relates that Celsus removed tonsils twenty centuries ago, but Farlow of Boston resuscitated the operation in the nineties. This communication is the result of his personal impressions from 204 cases long under supervision. He disapproves of removing the tonsils before the age of 6. The best and most durable results were in children between 7 and 12. Before this age he temporizes, merely removing obstructing adenoids, as the operative shock or anesthesia may prove fatal, with a tendency to the status lymphaticus, while the children are more apt to have acquired immunity to respiratory infections by the age of 7 or older. Chronic otitis and mastoiditis are rare in Cuba, so that postponing the tonsillectomy is less dangerous than farther north. One young man died from pulmonary tuberculosis which flared up a month after the tonsillectomy, although there had been no signs of an active process before. He ascribes this fatality to the general anesthesia. He now operates only in afebrile cases, and only under local anesthesia. He emphasizes the need for keeping patients in bed after tonsillectomy; two days for adults and five days for children. This gives a chance to feed the children properly. Otherwise they refrain from eating as it is painful, and they lose in weight.

Therapeutic Transfusion of Blood.—Recio and Figueras have organized a systematic service for blood transfusion in Cuba with classified donors at the army hospital. They describe the history of the procedure, the various methods in vogue, and the indications and contraindications. The Lindemann indirect method was selected as superior to others; the blood is not treated with any chemical. The donors belong to the army and are thus available at any hour. The remuneration has been fixed at $50. The amounts transfused have ranged from 100 to 1,000 c.c. during the six months the service has been in operation. The third and the fifth patients in the series of thirty-four died within three hours of the transfusion, both presenting the same picture of precordial distress, vomiting and drop in blood pressure. In all the other cases the outcome surpassed all anticipations. The details of twenty-seven cases are given in full. Aside from urticaria in four cases in which the amount of blood transfused was more than 500 c.c. no by-effects were observed.

Revista Médica del Uruguay, Montevideo

December, 1922, **25**, No. 12

Case of Essential Syphilitic Fever. J. Montes Pareja.—p. 853.
*Lumbar Puncture in Diabetes. C. Bordoni Posse.—p. 858.
Bismuth in Treatment of Inherited Syphilis. M. Ferreria.—p. 862.
*Sensory Disturbances with Cortical Lesions. A. Sarno.—p. 865.
Cure of Cicatricial Stenosis of Esophagus. Aquiles di Lorenzo.—p. 877.
Pneumococcus Peritonitis in Infant. P. E. Duprat.—p. 882.
Osteomyelitis with Multiple Foci. R. M. del Campo.—p. 888.
Serologic Tests of Cerebrospinal Fluid. A. Prunell.—p. 893.

Lumbar Puncture in Diabetic Acidosis.—Bordoni Posse adds another case to the few on record in which diabetes seemed to be favorably influenced by lumbar puncture. Lhermitte has reported subsidence of glycosuria and polyuria after lumbar puncture in two cases of diabetes. In Bordoni Posse's case there was intense acetonuria and diaceturia, and 6 liters of urine. After lumbar puncture, without change of diet, the glycosuria dropped from 360 to 5 gm. and the polyuria to 1 liter. The acetonuria persisted, but finally subsided after an oatmeal day. The man, aged 35, left the hospital free from glycosuria and polyuria and acetonuria. The diet contained 1,900 calories and 60 gm. of carbohydrates. The sugar content of the blood was 1.15. The author suggests that lumbar puncture relieves pressure on the central nerve centers which control the sugar content of the blood.

Sensory Disturbances from Cortical Lesions.—Sarno describes a personal case and mentions several from the literature which indicate a radicular distribution of sensory disturbances from injury of the cerebral cortex.

Archiv für Gynäkologie, Berlin

Jan. 27, 1923, **116**, No. 3

*The Capillary Circulation in Eclampsia. Hinselmann et al.—p. 443.
Relations Between Polycythemia and Hypercholesteremia in the Pregnant. R. Benda.—p. 506.
*Metabolism and Internal Secretion During Pregnancy. Knipping.—p. 520.
*Pregnancy Kidney Disease. Hinselmann et al.—p. 535.
Wassermann and Sachs-Georgi Reactions During Childbirth. Willenbücher.—p. 558.
*Action of Placenta Extracts: Placenta Optones. E. Puppel.—p. 571.
Teratoma of Umbilical Cord. P. Haendly.—p. 578.
*Immunization Against Streptococcus Infection. N. K. Louros.—p. 589.
Overlapping Placentas with Bichorial Twins. R. Meyer.—p. 599.

*Metastasis with Ovarian Cancers. A. Lessing.—p. 621.
Angiosarcomamyoma of the Uterus. R. Meyer.—p. 638.
*Nature of the Different Cells of Sex Glands. F. Scheunig.—p. 660.

The Capillary Circulation in Eclampsia.—Hinselmann and his co-workers give charts showing the fluctuations in the circulation through the capillaries in nineteen cases. They have records of six other cases and Nevermann has published eight others. There is thus a total of thirty-three cases of eclampsia systematically tested. The circulation in the capillaries was found abnormal in 90 per cent.; "a new fact," they say, "of the utmost importance." Intermittent spasm of the capillaries repeatedly arrested the blood stream completely, but even between these periods of complete stasis the blood stream in the capillaries was found exceptionally sluggish. Delivery is the most potent means at our command for influencing the capillary circulation. Venesection likewise aids, but no influence was manifest from the drugs and organ extracts tested to date. A tendency to capillary spasm was found in healthy pregnant women to an average stasis of 4.6 per cent.; in kidney disease, just before delivery, the stasis averaged 16 per cent. In severe eclampsia it averaged up to 100 per cent.; that is, the circulation in the capillaries was entirely arrested. The pregnancy induces the angiospasm. The angiospasm subsides after delivery, sometimes promptly, but usually slowly. Search for the reasons for this leads into an entirely new field. There is every reason to assume that the tendency to spasm—which we can inspect and record in the capillaries—affects the internal organs likewise. A skin-kidney-brain combination would explain much of the clinical picture in eclampsia. One of the charts in a severe case of pre-eclampsia shows in one eight-minute period that the stream was arrested sixty-three times, the stasis forming 42 per cent. of the total period.

The Internal Secretions During and After Pregnancy.—Knipping presents evidence to sustain the assumption that changes in the pituitary are responsible for the changes in the basal metabolism toward the close of pregnancy. The pituitary seems to be responsible also for the tendency to corpulence at the menopause. He thus exculpates the ovary and thyroid, and incriminates the anterior lobe of the pituitary, which opens up a prospect of more effectual treatment, especially in the corpulence or cachexia that develops in connection with a childbirth.

Pregnancy Kidney Disease.—Charts from six cases demonstrate the extremely abnormal condition of the capillary circulation in pregnancy kidney. The supply of blood to the tissues is thus intensively impaired. The disturbance in the circulation may persist for months afterward. The pregnancy kidney disease seems to obey in every respect the laws of acute kidney disease of any kind. Microscopic study of the capillary circulation seems to be giving an insight into some of these laws.

Experimental Research with Placenta Extracts.—Puppel asserts, on the basis of the research described, that placenta extract obtained by Abderhalden's method exerts a specific action indicating an internal secretion.

To Immunize Against Puerperal Infection.—Louros has been applying on a large scale at Athens preventive vaccine therapy of streptococcus infection, when the women could be treated a few days before delivery. He also applied vaccine treatment as a routine measure at delivery. The agglutinins in the blood seemed to indicate that the preferable method was the injection of 250 and 500 millions about the twentieth and the tenth day before delivery. There were no failures, he says, among the hundreds of women thus treated. He adds that Bumm is now trying at Berlin this active and simultaneous immunization against puerperal streptococcus sepsis.

Ovarian Cancer.—Lessing reports four cases of primary or secondary ovarian carcinoma. In one case the primary cancer was in the left ovary and there was metastasis in the other ovary, both tubes and the uterus.

Nature of Different Cells in Sex Glands.—Scheunig examined sections of testicles and ovaries from fetuses of 2 months to term, with special study of what Steinach calls F cells. Six colored plates of the findings from thirteen fetuses sustain his views, which do not harmonize with those of Steinach.

Archiv für klinische Chirurgie, Berlin

Jan. 27. 1923, **122**, No. 3

Case of Cystic Adamantinoma. H. Winter.—p. 567.
Bone Changes from Inadequate Diet. Seeliger.—p. 588.
*Fatality After Local Anesthesia. R. Eidens.—p. 603.
Idiopathic Cysts in Common Bile Duct. K. Zipf.—p. 615.
Phlegmons and Gangrene of Penis and Scrotum. Esau.—p. 635.
Subcutaneous Rupture of Rectus Muscle. K. Wohlgemuth.—p. 649.
Chronic Parotitis. K. Vogeler.—p. 655.
*Exophthalmic Goiter: Diagnosis and Prognosis. A. Troell.—p. 664.
*Postoperative Tetany. M. and K. Grasmann.—p. 699.
Hydronephrosis from Accessory Renal Vessels. C. Häbler.—p. 732.
*Resection of Choroid Plexus. C. Hinrichsmeyer.—p. 742.
*Transfusion of Blood to Arrest Hemorrhages. H. Stegemann.—p. 759.
Intestinal Injury Diagnosed from Track of Bullet. Büsing.—p. 782.

Fatalities with Local Anesthesia.—Eidens compares a personal fatal case of procain poisoning with a number of similar cases from the records. In all, the anesthetic had been injected into the neck region. In his case this was for removal of a cancer of the tongue in a man aged 62. Analysis of the data teaches that the dose of procain should be considerably smaller for blocking the nerves in the neck than elsewhere, as the balance between the vagus and sympathetic systems here is easily upset. The anesthetic is absorbed by the large nerves or reaches the nerves by getting into the blood. If collapse occurs, injection of 1 c.c. of 1:1,000 epinephrin solution directly into the heart might be tried as a last resort.

Exophthalmic Goiter.—Troell's report on sixty-two cases of exophthalmic goiter since 1919 has already been summarized (May 27, 1922, p. 1674), when published elsewhere. He reiterates that the anatomic changes in the thyroid are what determine the special symptoms in the different cases. In particular, the evidence indicates that not merely excessive, but perverted, functioning of the thyroid may be responsible for exophthalmic goiter. The resulting symptoms fall naturally into two groups. Each group is influenced by certain measures and not by others. The more toxic goiters are of the diffuse type; the blood pressure is high, the tolerance for carbohydrates low.

Postoperative Tetany.—Study of facts suggests that lack of care in avoiding the removal of the parathyroids is increasing the incidence of postoperative tetany. The upper parathyroids can almost always be left unmolested, by leaving intact the posterior branch of the superior thyroid artery. The authors denounce the practice of ligating all four arteries, and expatiate on the gravity of postoperative tetany. In Guleke's compilation of 160 cases, it proved fatal in 25 per cent. and incapacitated a further 17 per cent.

Resection of the Choroid Plexus.—In Hinrichsmeyer's case the hydrocephalus had induced spastic hemiplegia and finally progressive epilepsy. The patient was a boy, aged 10, and the hydrocephalus was ascribed to birth trauma. After two operations to divert the fluid it was secreted in enormous amounts. To arrest this, Hinrichsmeyer resected the choroid plexus on that side, and the production of fluid materially declined. The boy died in epileptic coma three weeks later. The right lateral ventricle had been transformed into an actual cyst.

Arrest of Hemorrhage by Transfusion of Blood.—Stegemann asserts that this is the surest and most rapidly acting means to arrest parenchymatous hemorrhage and hemorrhage from small vessels. Transfusion of blood supplies the lacking elements in the blood directly, and also stimulates indirectly their production. Its special field is in hemophilic bleeding and in anemia from excessive loss of blood. To arrest hemorrhage, small amounts, about 200 c.c., are all that is necessary.

Feb. 10, 1923, **122**, No. 4

*Gastric Ulcer with Goiter.— Haberer.—p. 789.
*Draining the Common Bile Duct into the Duodenum. Haberer.—p. 796.
*Chronic Subphrenic Peritonitis. O. M. Chiari.—p. 804.
Abnormal Fat Deposits in Omentum. O. Maier.—p. 810.
*Intratracheal Thyroid Tumors. O. Maier.—p. 825.
Mechanism of Development of Retropharyngeal Goiter. O. Maier.—p. 836.
*Clinical Features of Goiter. H. Czermak.—p. 843.

*Influenza as Factor in Operative Complications. H. Czermak.—p. 916.
*Mechanism and Fate of Pseudarthrosis. S. Mitterstiller.—p. 939.

Gastric Ulcer with Goiter.—In Haberer's patient a diverticulum in the esophagus, a retrosternal goiter, and a bleeding gastric ulcer all required separate operations at the same time. He has witnessed this association of gastric ulcer or catarrh with a large goiter in other cases, and regards the interference with the circulation from the goiter as the main factor in the stomach disease.

Draining Common Bile Duct Into Duodenum.—Haberer refers to cases in which there is a possibility of calculi being left when the lower end of the bile duct is thick and the lumen small. Under these conditions he joins the common bile duct, side-to-side, with the upper duodenum, always with good results.

Chronic Subphrenic Peritonitis.—Chiari found the symptom that first attracted attention was a peritoneal friction sound. This sound lasted sometimes only a few hours or days and then disappeared, but returned at the slightest "cold." The intervals sometimes reached months. The sound can be heard at the costal arch from the median line to the axillary line and can be perceived with the hand laid flat on the wall. A history of pleurisy aids in the diagnosis. The pains in some cases resembled gallbladder colic and there was generally pain in the shoulder. The pains are aggravated by movements and deep breathing more than is the case with gallbladder and stomach affections. Treatment as for rheumatism is generally promptly effective. Adhesions between the liver and the diaphragm testify to the preceding inflammatory process. The infection is not virulent and the general health does not suffer much. The ordinary laparotomy incision does not reveal this inflammatory subphrenic peritonitis. It may thus have escaped detection in certain cases of supposed appendicitis in which nothing to explain the abdominal symptoms was discovered.

Intratracheal Tumors.—Maier compares two cases of intratracheal tumor at the Innsbruck surgical clinic with twenty-seven from the records. The intratracheal adenopapilloma and cystadenoma, originating in the thyroid in his personal cases, were successfully removed. Zimmermann's case warns that an intratracheal tumor should be looked for when the breathing is still defective after thyroidectomy.

Goiter.—Czermak devotes seventy-three pages to this study of the etiology, treatment and outcome of goiter. It is based on 2,005 cases in Haberer's surgical service at Innsbruck since 1912. Exophthalmic goiter was noted in 2.6 per cent. of 1,657 cases. All were apparently cured by operation.

Influenza and Surgery.—Czermak discusses influenza complicating a surgical affection, and surgical complications of influenza. It reduces the resisting powers to such an extent that postoperative sepsis is more liable. No operations that can be deferred should be attempted within four months of an attack of influenza. Haberer always inquires in regard to this when contemplating an operation.

Pseudarthrosis.—Thirty-six photomicrograms accompany Mitterstiller's seventy-page article on the conditions inducing pseudarthrosis, the microscopic findings, and the outcome. It is based on four cases.

Deutsches Archiv für klinische Medizin, Leipzig

December, 1922, **141**, No. 3-4

*Diseases Due to Strongyloides Intestinalis. E. Thomas.—p. 129.
*Epinephrin and White Corpuscles. F. O. Hess.—p. 151.
*Endocarditis Lenta. Lämpe.—p. 165.
*Silicic Acid in Treatment of Infectious Diseases. E. Thoma.—p. 175
Calcium in Cerebrospinal Fluid. H. Leicher.—p. 196.
Liver Function Tests. R. Stahl.—p. 204.
Wilson's Disease. J. Löwy.—p. 213.
"Metabolism of Infants." Edelstein and Langstein.—p. 219.
Reply. S. Lauter.—p. 223.
Physiology of the Thymus. H. W. Knipping.—p. 224.
Urobilinogen Determination. W. Hueck and T. Brehme.—p. 233.
Blood Stream in Capillaries. W. Parrisius and Winterlin.—p. 243.
Addition to "Corynebacterium Abortus Infectiosi Bang." M. Klimmer and H. Haupt.—p. 252.

Disease Due to Strongyloides Stercoralis.—Thomas reviews the literature on this parasite, *Anguillula intestinalis*, and publishes a case with recovery after thymol. The patient suffered from attacks of diarrhea, with blood, mucus and many larvae of anguillula in the feces. There was an increase in eosinophils in the blood and stools, and many Charcot-Leyden crystals in the feces.

Epinephrin and White Corpuscles.—Hess attributes the divergences in the literature to several causes. The time of taking the blood sample and the stage of the disease are important. In the beginning of typhoid the reaction is normal. During the high fever, the reaction is minimal, but it becomes very strong during the stage of remission. The most important factor was found by Csépai and Sanguinetti, who showed that the supposed lack of reaction (increased blood pressure) to epinephrin is chiefly due to diminished resorption in the subcutaneous tissue, although it does not explain all cases. The intravenous injection is disagreeable to the patient and the blood changes pass too quickly.

Endocarditis Lenta.—Lämpe reports his experience with nineteen cases of this disease. It seems that its character has changed in the last few years although the most important signs described by Schottmüller were present in most of them. A valvular defect (usually aortic), anemia, enlarged spleen, and remittent fever are the cardiac symptoms. Embolism occurs later. The first kidney signs of the disease are red corpuscles in the sediment, which must be examined even in the absence of albumin. The blood culture was very often negative, and in some cases hemolytic streptococci grew instead of the expected viridans. The disease lasts for months, and most of the patients die.

Silicic Aid in Treatment of Infectious Diseases.—Thoma injected a colloidal solution of silicic acid into rabbits. He found that it can prevent infection by human tubercle bacilli, but it did not show any therapeutic effects on animals previously infected. He had the impression that the infection spread rather more extensively in the treated animals. Similar negative results were obtained in several patients, with only one exception. Leukocytosis and fever follow the injection. He tried the preparation in a few cases of typhoid, a dysenteric polyarthritis, and an influenza bronchopneumonia, and believes that it had a favorable influence in these cases, due to the general action of colloids.

Jahrbuch für Kinderheilkunde, Berlin

December, 1922, **100**, No. 3-4

*Kidney Function Tests in Children. L. Mendel.—p. 123.
*Scurvy and Infections. Hamburger and Goldschmidt.—p. 210.
Whooping Cough in Infants. K. Gottlieb and B. Möller.—p. 222.
*Instability of Colloids in Infants' Serum. J. Duzár.—p. 237.
*Associated Tonsillitis. A. Orgler.—p. 243.

Kidney Function Tests in Children.—Mendel used the dilution and concentration tests, and determination of hydremia, blood chlorids and nonproteïn nitrogen in healthy and nephritic children. He complains of the complications brought into the valuation of the tests by simultaneous affections of the tissues. He found, in healthy children, brief hydremia following the ingestion of fluids and preceding the diuresis.

Scurvy and Resistance to Infection.—Hamburger and Goldschmidt examined the serum of children and animals suffering from scurvy. They found that the serum had the same amount of normal amboceptor and complement, as the healthy controls.

Instability of Colloids in Infants' Serum as Modified by Age.—Duzár tested the serum of infants with dilute alcohol and noted the intensity of flocculation produced. The serum of the new-born is labile, though less than in adults; it increases in stability up to the second month. After this period the stability decreases. He agrees with Ruzicka's theory of the hysteresis of protoplasm, which explains the process of growing old as a function of decrease of the dispersity of colloids.

Associated Tonsillitis.—Orgler observed the tonsils in vaccinated children and found in some on the fifth and sixth day a swelling. In others little points appeared, while other children had a typical follicular tonsillitis on the seventh and tenth day after vaccination. He points to the possibility that tonsillitis in infectious diseases does not prove that the tonsils are the portal of infection.

Monatsschrift für Kinderheilkunde, Leipzig

December, 1922, **24**, No. 3

*Spontaneous Pneumothorax in Children. B. Schönfeldt.—p. 225.
*Syphilis in Third Generation. A. Kraus.—p. 236.
*Chemistry of Brain in Dystrophy. S. Ederer.—p. 244.
Xerophthalmia in Children. G. Genck.—p. 251.
Recent Works on Milk Hygiene and Dairies. Grimmer.—p. 257.
Recent Literature on Helminthiasis in Children. H. Brüning.—p. 331.

Spontaneous Pneumothorax in Children. — Schönfeldt observed four fatal cases of spontaneous pneumothorax and two of emphysema of the mediastinum and subcutaneous tissue in children suffering from influenzal pneumonia. One of the latter cases recovered. Two of the cases were caused by perforation of an abscess, one by rupture of an emphysematous bubble. The fatal case of mediastinal emphysema was due to perforation of a large bronchus in tuberculous tissue. Roentgen rays may furnish the only decisive diagnostic sign in some cases.

Syphilis in Third Generation.—Kraus describes a case of congenital syphilis in an infant whose mother had been also treated for syphilis shortly after her birth. The mother has Argyll Robertson pupils. The Wassermann reaction was positive in the infant, in the 23 year old mother, and in the grandmother, who had had several abortions preceding the birth of the mother. The father of the infant has no signs of syphilis, and responded negatively to the Wassermann test on two occasions.

Chemistry of Brain in Dystrophy. — Ederer found in the brains of dystrophic infants a decrease in unsaturated phosphatids to a third of the normal, and an increase in the saturated phosphatids, cerebrosids and sulphatids to twice the normal values.

Zeitschrift für Tuberkulose, Leipzig

January, 1923, **37**, No. 4

*Transient Tuberculous Phenomena in Children. E. Rüscher.—p. 241.
*Forms of Tuberculosis and the Age. K. Lydtin.—p. 260.
*Origin of Tuberculosis of Suprarenal Capsules. F. Schwarz.—p. 271. Conc'n.

Passing Inflammatory Tuberculous Phenomena in Children.—Rüscher discusses different inflammatory conditions in tuberculous patients, and publishes some cases. The toxic etiology of these passing affections becomes more and more restricted in favor of tubercle bacilli. Tuberculids of the skin, phlyctenosis, purpura, some cases of arthritis, serous meningitis, and other exudative processes on serous membranes belong to this borderline between toxic and bacillary reactions.

Relation of Different Forms of Tuberculosis to the Age.—Lydtin examined in approximately 200 patients the relation of the age to the form of the tuberculosis. The percentage of proliferating, cirrhotic and exudative forms is the same in every age. The development of these forms is different. In young persons the tendency goes from a proliferating to an exudative form, while the exudative form in older people has temporary ameliorations of the cirrhosis and cavity types.

Origin of Tuberculosis of Suprarenal Capsules.—Schwarz examined in serial sections the suprarenal capsules from twenty cases of tuberculosis. In 83 per cent. of the cases of miliary tuberculosis, the suprarenals, especially the right, were affected. There was no difference between cortex and medulla. In sixty-five cases of chronic tuberculosis of suprarenals, hematogenous infection from a primary tuberculosis of the lungs was the cause.

Zentralblatt für Chirurgie, Leipzig

Feb. 10, 1923, **50**, No. 6

Cuff Method of Anastomosis After Stomach Resection. Goepel.—p. 201.
Kappis' Splanchnicus Anesthesia in Diagnosis. Kulenkampff.—p. 208.
An Artificial Knee Joint. C. ten Horn.—p. 213.
*Roentgen-Ray Examination of Subphrenic Abscess. J. Sommer.—p. 215.
*Operative Fixation of Floating Kidney. S. Kostlivy.—p. 217.
Incarcerated Hernia. E. Pólya.—p. 219.
What Causes a Ligature of Cystic Duct to Open? Hofmann.—p. 220.
Laceration of Carotid Artery from Blow in Face. Pólya.—p. 223.

Roentgen-Ray Examination of Subphrenic Abscess.—Sommer recalls that the air bubble over the abscess always rises to the highest point of the abscess cavity. The shifting of the position of the air bubble as the body is moved and twisted allows exact localization, and shows the most direct mode of access. If the abscess does not contain air, 30 c.c. of the fluid can be withdrawn and air injected.

Operative Fixation of Floating Kidney.—Kostlivy describes a method of fixation of the kidney that he has employed with good success in twenty-six cases. The use of a strip of fascia to suspend the floating kidney is not new, but other surgeons have sought to raise the lower pole. This throws the kidney into a position in which its equilibrium is easily disturbed; for instance, an extreme drop of the diaphragm, as in vomiting, may easily tip it forward, as Kostlivy observed in a case in which the Henschen method of fixation had been used. Therefore, he encircles the kidney with the strip of fascia at its smallest transverse diameter. The interval since operation in many of the cases is up to two years, and recent examinations show the kidney still firmly in place. The article has one illustration, which makes plain the technic.

Feb. 17, 1923, **50**, No. 7

The Milk-Sirup Enema. H. Küttner.—p. 249.
Technic of Rectum Amputation. H. Braun.—p. 250.
Hemorrhagic Erosions in Mucosa of Excluded Pylorus. Aoyama.—p. 252.
Physiologic Gastro-Enteropexy. C. Hammesfahr.—p. 254.
*Recognition of Benign Gastric Tumors. F. Erkes.—p. 256.
Suture of Opening in Broad-Based Hernias. C. Bayer.—p. 257.
*Construction of Artificial Vagina. N. Hortolomei.—p. 259.
*Open Treatment of Fracture of Heel-Bone. E. Becker.—p. 262.
*Parchment Paper for Drains. M. Madlener.—p. 264.
Action Current of Granulating Wounds. Melchior and Rahm.—p. 265.

The Recognition of Benign Gastric Tumors.—Erkes states that benign gastric tumors are rare. Tilger found in 3,500 necropsies only fourteen gastric tumors consisting of connective tissue and muscle. In his own case the correct diagnosis was established by a roentgenogram. The circular-shaped filling defect, with almost smooth edges, pointed to a benign tumor. The same observations were made by Dessecker and Konjetzny in their recent cases, in Dessecker's case a fibromyoma and in Konjetzny's case a fibroma. A carcinoma always shows irregular outlines in the roentgenogram. Transverse stomach resection, such as was employed in Dessecker's case, would seem scarcely necessary, as simple excision at the base of the pedicle, as was done in Konjetzny's case and with success in his own case, accomplishes the purpose in a simpler manner.

Construction of Artificial Vagina from the Small Intestine.—Hortolomei reports 4 cases in which he constructed an artificial vagina in accordance with the Mori-Baldwin procedure. In 3 cases the vagina so constructed functioned properly and was durable. In the fourth case death ensued from peritonitis. The records show a total of 55 cases in which this method was applied, with a mortality of 21.8 per cent. On the other hand, the Schubert procedure has been employed in 48 cases without a single death. The Schubert method (construction of the vagina from the large intestine) is comparatively free from danger, as the peritoneum is not opened, but the Mori-Baldwin procedure is easier technically.

Fracture of Os Calcis.—Becker discusses the best means of securing coaptation in comminuted or compression fractures of the os calcis. Casts, splints and bandages are not sufficient to keep even the coaptated fragments in place. He prescribes complete rest and applies an ice bag for from ten to fourteen days or until the effused blood has been mainly absorbed. Then, without expelling the blood from the operative area, about a thumb's width below the external malleolus he makes a horizontal incision a few centimeters in length. Through this incision an elevator is passed downward and pushed directly under the lower surface of the bone toward the inner margin of the foot. By lowering the handle of the elevator, the tip is felt under the skin just below the internal malleolus. After making a small horizontal incision, the elevator is pushed through and by energetic traction on the tip and handle, the fragments are reduced to place. One perceives at once that the traumatic flatfoot is disappearing under one's hand and that the normal arch is being perfectly restored. Mechanical fixation of the reduced fragments follows: While an assistant holds the elevator in position, the operator passes an electric drill postero-anteriorly through

the skin and bone of the calcaneum. The drill is left in the fractured bone, lest its withdrawal and the insertion of a nail or a screw disturb the relations of the fragments. The elevator is now removed, and a bandage is applied to maintain the arch of the foot. A roentgenogram will show whether the drill lies properly and whether the fragments are coapted in the manner desired. A projecting bone splinter may be removed after about six weeks, and then the drill is also removed. When the wound heals, the usual medicomechanical after-treatment is begun. Becker's results were good in every instance with this operative reduction of the bone fragments and fixation with a drill left in place until healing is complete.

Parchment Paper for Drains.—Madlener again calls attention to the value of parchment paper for drains. Parchment paper does not irritate the wound, does not imbibe moisture and does not exert as much pressure as a glass tube. The parchment is sterilized and used dry. It becomes soft from the action of the wound secretions, does not adhere to the surrounding tissues, and is easily removed without causing pain. As thousands of cases have shown, it functions well as a drain. Secretions drain along both the inner and the outer walls.

Zentralblatt für Gynäkologie, Leipzig

Feb. 3, 1923, **47**, No. 5

Lumbar Puncture in Treatment of Eclampsia. Heynemann.—p. 186.
Skin Affections of the Menopause. R. Bauer.—p. 188.
Primary Abdominal Pregnancy. L. Seeligmann.—p. 190.
Ovarian Pregnancy at Term. J. Jacub.—p. 193.
*Conservative Treatment of Pyosalpinx. E. Hönck.—p. 195.
My Experiences with the Kjelland Forceps. E. Meumann.—p. 197.
Treatment of Leukorrhea. A. Loeser.—p. 205.
"Rupture of Symphysis During Childbirth." Stiassny.—p. 207.

Conservative Treatment of Pyosalpinx by Abdominal Incision.—Hönck refers to Ehrlich's case in which gonorrhea had been acquired during pregnancy and had given rise to bilateral pyosalpinx. The pain became so severe that laparotomy was resorted to, and both tubes were found swollen to the size of the thumb and filled with pus. Without further intervention the abdomen was closed. The patient recovered, and the pregnancy progressed to term. Hönck gives three similar cases that he has observed. From his observations he would not hesitate in suitable cases to open the abdomen, as a conservative form of treatment of pyosalpinx. The operation itself, together with the manipulation of the diseased organs, evidently produces marked resorption processes, similar to those often observed in tuberculosis of the peritoneum. Many cases of pyosalpinx do not heal after months and even years of treatment, and continue to cause pain and discomfort. Heretofore a radical operation on such organs could not always be avoided, even in young persons. In the future, we may try breaking up some of the worst adhesions, avoiding the release of pus. To increase the reactive process, Hönck proposes, in the presence of indolent tumors, to apply artificial heliotherapy directly to the diseased organs. If proper care is taken, no damage will be done.

Feb. 10, 1923, **47**, No. 6

*Premature Births and Congenital Syphilis. E. Kehrer.—p. 226.
Rectovaginal Adenomyohyperplasia. Pincsohn.—p. 231.
Umbilicus Sign of Intraperitoneal Hemorrhage. Schmid.—p. 234.
Spontaneous Separation of Ovarian Cyst in Douglas' Pouch. Alex.—p. 236.
Death from Gas Embolism After Abortion. H. Naujoks.—p. 240.
Subcutaneous Emphysema During Childbirth. Mittweg.—p. 243.
Combined Interruption of Pregnancy and Sterilization. Doerfler.—p. 244.

Premature Births and Congenital Syphilis.—Kehrer gives the results of his studies on the frequency of syphilis in premature births; the influence of syphilitic mothers on the child; and the prognosis for children with congenital syphilis. He interprets his statistics—17,167 childbirths, including 1,541 premature—as showing that syphilis plays no considerable part as a direct cause of premature births, or, in any event, that it does not possess the importance which has hitherto been ascribed to it. However, he found that the prognosis for all children born of syphilitic mothers is bad; not only during intrauterine development but also as regards susceptibility to external influences after birth.

Feb. 17, 1923, **47**, No. 7

Pathology and Therapy of Posterior Parametritis. Brõse.—p. 258.
*Phlorizin Test in Diagnosis of Pregnancy. K. Burger.—p. 260.
Diffuse Hypertrophy of Mamma at Puberty. A. Heyn.—p. 263.
*Roentgen Irradiation in Epilepsy. M. Fraenkel.—p. 265.
*Plastic Closure of Hernial Opening. Hilgenreiner.—p. 268.
Sliding Hernia with Involvement of Tube. F. Seibold.—p. 270.
*Suture of Uterus in Cesarean Section. A. von Reding.—p. 272.
Operative Treatment of Uterine Hemorrhages. Pfeilsticker.—p. 275.

The Phlorizin Test in the Diagnosis of Pregnancy.—Burger applied the phlorizin test to 55 women, 28 of whom were pregnant and 27 were not. Of the 27 nonpregnant women five gave a positive reaction, or 18.5 per cent. Of the 28 pregnant women five gave a negative reaction. Pregnancy was in most cases less than three months advanced. Since the test when applied to pregnant women is positive in a large majority of cases, it may be regarded, when positive, as indicating, with a high degree of probability, a state of pregnancy.

Roentgen Irradiation in Epilepsy.—Fraenkel describes in detail a case of epilepsy in a woman aged 42, in which roentgen irradiation combined with arsenic medication effected a complete cure. He refers to Strauss' contention that epilepsy is not a brain disease as is frequently erroneously assumed, but is a constitutional disease, the essential character of which lies in a disturbance of the functioning of endocrine glands.

Plastic Closure of Hernial Opening by Means of the Uterus.—Hilgenreiner emphasizes the point that plastic closure of a hernial opening by means of the uterus should be applied only exceptionally; as when the usual radical operations do not suffice, or when this method is simpler than other methods.

Suture of the Uterus and Uterine Drainage in Cesarean Section.—Von Reding holds that even a single suture in the uterus is not indicated in all cases of cesarean section, but only in the "clean" cases in which no infection need be feared. In the contaminated cases, in which the wound must be regarded as infected or in which the possibility of a wound infection is present, he regards suturing of the uterus as contraindicated, because this is entirely opposed to the surgical principles of wound treatment. No experienced surgeon, he argues, would think of suturing an infected or even a suspicious looking wound, though it were only a superficial wound, since, in case of subsequent pus formation, the outflow of the pus would be obstructed and would lead to severe retention symptoms of a general and local nature. Retention of pus may lead either to general infection, or, more frequently, remains localized and an abscess forms. If the uterine wound is left open and an abscess develops, it can extend in the direction of the uterine cavity and thus find an outlet. Moreover, leaving the uterus wound open presents no essential disadvantages; in case no complications arise, a primary, though somewhat delayed, wound closure can be expected. Von Reding explains also his drainage method, with several stout catgut loops tied through the edges of the wound on each side. This holds the lips of the incision slightly apart.

Polska Gazeta Lekarska, Lwow

July 9, 1922, **1**, No. 28

Spondylitic Ankylosis of the Spine. L Sobieszczanski.—p. 573.
Wassermann Reaction and Its Practical Use. F. Venulet.—p. 574.
*Treatment of Typhus Fever. J. Tomanowski.—p. 577.
Colloids and Non-specific Proteins in the Treatment of Skin and Venereal Diseases. W. Lukasiewicz.—p. 577. Conc'n No. 30.
Dentistry in Poland. A. Cieszynski.—p. 585. Conc'n No. 29.

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Hysteric Paralysis of Lower Extremities with Pseudo Symptoms of Mendel-Bechterev and Rossolino. A. Domaszkiewicz.—p. 589.
Mechanism of Pulse Acceleration in Different Pathologic States. W. Janowski.—p. 590.
Antisyphilitic Action of Bismuth. J. Merenlender.—p. 592. Cont'd.

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Auto-hemotherapy in Pruritic Skin Diseases. T. Dybowski.—p. 605.
Pathology of Lupus Erythematodes. L. Füllenbaum and D. Goldman.—p. 607.

Treatment of Typhus Fever by Method of Dr. A. Brenner.—Tomanowski reports thirty-four cases of typhus treated

with inhalation of oxidized turpentine, according to Brenner's technic. All patients recovered, while in a previous series of fifty-one patients, treated by ordinary methods, seven died. This is a death rate of 14 per cent. Tomanowski gives the following advantages of Brenner's method over others: 1. The patient sleeps better under the turpentine treatment. 2. Delirium and other nervous manifestations are much less than with other methods of treatment and the patient is quiet. 3. The inhalation of turpentine materially reduces the tendency to respiratory complications. 4. The patient eats better. 5. The ozonized turpentine given by inhalation refreshes the air in the wards.

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*Syphilitic Disease of Cutaneous Vessels. S. Mendes da Costa.—p. 2695.
*Influence of Infectious Diseases on Heart and Vessels. J. Kuiper.—p. 2704.
*Rupture of the Aorta. W. M. de Vries.—p. 2713.
Cardiovascular Diseases and the Eyes. W. P. C. Zeeman.—p. 2741.
Accidental Heart Murmurs in Children. J. de Bruin.—p. 2757.
Fibrillation of Part of Heart. S. de Boer.—p. 2772.
Radiology of Disease in Heart and Aorta. N. Voorhoeve.—p. 2797.
*Vascular Disease in Women. A. H. van Rooy.—p. 2817.
Drugs and Baths in Cardiovascular Disease. E. Laqueur.—p. 2839.
*Hemangiomas. S. Mendes da Costa.—p. 2874.

Disease of the Cardiovascular System.—The ten long articles in this bulky number are the lectures delivered by the members of the medical faculty at Amsterdam in a postgraduate course on the heart and vessels. The topics in the three preceding years of this annual course were syphilis, tuberculosis and cancer.

Syphilitic Disease of the Vessels in the Skin.—Da Costa discusses the vascular changes in syphilids; also in syphilitic phlebitis and arteries, and in livedo racembsa.

Influence of Infectious Diseases on Heart and Vessels.—In the course of this review, Kuiper warns that we cannot place much reliance on digitalis in acute infectious diseases. Camphor, caffein and strychnin are better. Sleep may be of more value than drugs, and hence caffein had better not be given in the evening. Epinephrin dilates the coronary and contracts other arteries; consequently it helps to maintain a failing heart. With dyspnea from weakness of the heart, oxygen may give great relief, and in whooping cough may tide the patient past a danger point. He gives the oxygen at first for fifteen minutes and then for five in each fifteen minutes. In conclusion he warns the physician to oversee the first application of febrifuge baths in acute infectious diseases. They are liable to depress the heart more than is generally suspected.

Rupture of Aorta.—De Vries draws the clinical picture of rupture of the aorta as he observed it in 4 traumatic cases. In 5 others the rupture was spontaneous, and in 10 rupture of an aortic aneurysm occurred. Five cases were associated with carcinoma of the esophagus. These 24 cases were encountered in the course of 6,500 necropsies.

Pathology of the Vascular System in Women.—Van Rooy, for varices in the external genitals recommends compression in preference to incision. Clamping a varicose vein to arrest hemorrhage often entails rupture at another point. Embolism is the great danger from simple thrombophlebitis and phlegmasia alba. It is encountered in about 0.3 per cent. of the cases. The electric light bath is useful in treatment and does not require the moving of the leg. No active movements should be allowed until the temperature has been normal for two weeks, and the patient should not be allowed to leave the bed for a month at least. Some insist that 60 per cent. of these patients never regain the full use of the limb. Symptoms suggesting chronic salpingitis but with negative gross findings on palpation may be traceable to varicose enlargement of veins in the broad ligament. If the symptoms persist under palliative measures, an operation on the varicocele is advisable. Several illustrative cases are given. In van Rooy's four cases, years of treatment had been futile as the symptoms constantly returned, but cure was complete after operation in three cases. The fourth case was complicated by general asthenia and the cure is not so complete. In one of the cases a phlebolith had formed in the vein.

Hemangiomas.—Da Costa reviews ten kinds of hemangiomas in addition to the idiopathic telangiectasias.

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*Excretion of Hippuric Acid. I. Snapper and A. Grunbaum.—p. 2910.
*Continuous Lumbar Drainage. J. F. W. S. v. N. Schuuren.—p. 2916.
*Eye Disturbance in Hysteria. F. S. Stibbe.—p. 2921.
*Card Library. W. Schuurmans Stekhoven.—p. 2926.
*Organs Without Local Nervous Apparatus. G. van Rijnberk.—p. 2930.

Cause of Delay in Excretion of Hippuric Acid with Contracted Kidney.—Snapper and Grunbaum found only traces or no hippuric acid in the blood in three normal subjects. With incipient kidney disease, from 10 to 25 mg. of hippuric acid was found in 250 c.c. of blood, and very little was excreted. The amount excreted was still less in four patients with severe renal insufficiency and the blood showed from 60 to 90 mg.

Continuous Lumbar Drainage.—Schuuren relates that a boy aged 5 seemed to be recovering from meningococcus meningitis by the thirteenth day. Marked benefit had followed lumbar puncture. Then severe symptoms flared up again and Schuuren arranged for continuous drainage of spinal fluid. The benefit was pronounced. The flow of fluid was easily regulated by raising or lowering the foot of the bed. No by-effects were observed during the two weeks of this drainage. Recovery was complete, except for deafness, by the end of a month from the first symptoms. The drainage was carried out with a loop of silver wire introduced through the cannula after withdrawal of the needle. The cannula was then removed. The antiserum could be injected at a higher interspace to avoid interfering with the drainage. None had been given in this case. Continuous wire drainage seems logical and effectual, and is certainly less strain than often repeated lumbar puncture.

Visual Disturbances in Hysteria.—Stibbe's patients were a young man and young woman, natives of Java. The visual disturbances were concentric contraction of the visual field, achromatopsia and dyschromatopsia, with diplopia in only one eye. The diplopia was not modified by instillation of atropin.

A Card Library.—Stekhoven describes a method for the separate alphabetical filing of each abstract. A library of contemporaneous periodical literature with the maximum of accessibility can be thus provided. He has organized a central cooperative exchange for foreign medical journals, and has now planned this card system to supplement it.

Organs Without Local Nervous Apparatus.—Van Rijnberk argues that organs which do not possess a local nervous apparatus all have one thing in common, their function is subordinate to a higher and more general function. The striped muscles, the sweat glands, the glands with a known internal secretion, the liver, the kidneys, the testicles and ovaries are all under strict nervous and chemical control to insure the best results for the organism as a whole. We can thus assume that the function of organs with an independent nervous system is more of local than of general importance.

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*Origin of Vesicular Breathing Sounds. E. Törnell.—p. 65.
*Autoplastic and Heteroplastic Bone Grafts. A. Troell.—p. 79.

Mechanism of Vesicular Breath Sounds.—Törnell theorizes on the factors involved in vesicular breath sounds and heart murmurs. His experiments with rabbits were inconclusive.

Fate of Bone Grafts.—Troell gives eleven plates of the findings in thirteen cats after implanting a strip of the tibia close to the head or neck of the femur or else at some other point where conditions were favorable for the healing of the graft in place. The implant always died and was absorbed, but new bone formed in its place. However, as there were no functional demands on the new bone, this, too, was resorbed in time. The roentgenograms and photomicrograms show that the new bone finally formed, differs materially from normal bone, although macroscopically it seems normal. The process is entirely different with ivory implants.